UMASS/AMHERST
312066005805667

630-174
1876-80
Benj. P. Ware
No 5117

UNIVERSITY OF MASSACHUSETTS · AMHERST · 1863

DATE DUE			

UNIVERSITY OF MASSACHUSETTS
LIBRARY

S
74
E8E8
1876-80

TRANSACTIONS

OF THE

Essex Agricultural Society,

IN MASSACHUSETTS,

For the Year 1876,

WITH THE

FIFTY-FOURTH

ANNUAL ADDRESS,

BY CYRUS M. TRACY.

Published by Order of the Society.

SALEM:
PRESS OF THE ESSEX COUNTY MERCURY.
1876.

UNIVERSITY OF
MASSACHUSETTS
AMHERST, MASS.

630.06
Es7 v.10
1876-80

ADDRESS.

I have, to-day, a double satisfaction. While I will not weakly dissemble the honest pleasure that one may feel at being selected for this service, I make that small beside the honor of addressing an association like this. And as the first thought of the first man has been supposed to have been, and as the first thought of any one awaking to consciousness naturally must be, embodied in the question "Where am I?" so this same inquiry rises now in my mind, to admonish me who are those in whose presence I am speaking.

You know, gentlemen, that this reflection has no reference to blood, birth, or fortune. There is a vision of greater things before me. I see in those who hear me, the best accredited representatives of the American civilization of to-day. I speak carefully. I might be told that an assembly of learned men, a body of scientists, a gathering of mercantile boards, or some religious council or congress of legislation, could better answer my terms; but I think otherwise. And if I proceed to develop, somewhat, the character I have ascribed to you, I hope it may be apparent that I rather point you to your duties and privileges, than indulge in any word of adulation.

You represent a territory of some four hundred and seventy square miles, supporting a population of two hundred thousand; a territory most remarkable every way, whether in the present or past. It is busy with almost every modern indus-

try, from the heavy workings of cotton in Lawrence, and granite in Rockport, of shoes in Lynn, and fishery in Gloucester, to the lighter craft of combs in West Newbury, shoe-threads in Andover, and cigars in Saugus. You stand for twenty-seven towns, and six incorporated cities of perhaps twenty thousand souls each, whose school-houses are like palaces, and whose churches stand thicker than the old castles that look down on "the wide and winding Rhine." You are gathered from all political parties, and you stand for every form of religious thought that calls itself Christian, and possibly some who do not. You speak the English language more purely than any other people, and you read the authors of every civilized tongue under the whole heaven. Not only so, but yours is a community marked of history. You have the first landing-place, almost, of pilgrim feet, and the first seat where Legislation sat down in the name of this nation of the West; and the first-built church of God's worship no doubt stands to-day within your borders. It was on your soil that the first defiance was done to the flag of England, it was here, too, that the first open collision with that power occurred, and it was this soil and this community that earliest drove out the soldiers of the insane king, and gave timely notice to all the world that here was *one* spot already in possession of Liberty. Nor less in Art and Science. The cinders of the oldest iron-foundry in America lie to-day on the river-bank, quiet witnesses of their own antiquity; the water still brightly flows in the oldest canal, hardly three miles away, and the first weaving of American linen and wool is said to have been done in the same region. Why should I seek to unroll the long list of names of productive thought, to recite to you the experimentation of Jacob Per-

kins, the navigation of Nathaniel Bowditch, the skillful handicraft of Joseph Jenks and John Adam Dagyr? For even where such names are somewhat less emblazoned of fame, history, with impartial pen, omits not the pregnant facts, that here in Essex were made the first dies for mint-coinage, and the first engine for extinguishing fire; that here was obtained the first American patent, and that for the first and only scythe ever brought to successful use by the haymaker.

But why do I thus, with reiterative memory, array these things afresh before you, familiar as most of them must be already? Because, in an account of so rich and abundant honor, I seek for that which underlies and animates the whole. In all this reckoning of eminence and leadership, I look after that calling which may stand as foundation, or as fountain-head, for all this worthiness. And where shall I hit upon it—where shall I reach that craft that feeds others, but is unfed of them, that clothes others, but is not clad by them, that teaches what nature alone has taught it, and preaches only the gospel of God—where shall I find such a vocation except among the tillers of the ground and the keepers of flocks, among those whose most ancient ways were even learned of old within sight of the flaming brand above the gate of Eden?

You will understand me. I assume the point, and will prove it if I may, that as our well-esteemed community of Essex stands high in the scale of talent and enterprise, so the welfare of that talent, the good fortune of all that enterprise, have always found, and do to-day find, themselves basing down upon her agriculture, resting back confidently and securely against that class of men and of minds that in the indifferent manner of common speech we call her farmers.

Let me guard myself again. In England and elsewhere there are royal and aristocratic estates, decimated continually by death; and lower classes, so called, of coarse, and stern and rough-hewn humanity, from whose sounder timber the losses of the other are constantly repaired. This, too, may not indicate dishonor, yet I would not thus rate the unincorporate guild of whom I am speaking. In their case the nobility is rather with them, while it is still obvious that theirs is much the same relationship to the soil, as that which pertains to their humbler and foreign prototypes. It is not from our tillers of fields and feeders of herds that any higher rank is to be recruited. They have their own nobility. They have brought their race to its own sceptre, and like Napoleon, commenced a dynasty for themselves. Here and there are seen the shining memorials of their canonized great—of Choate and Tudor by the seashore, of Newell by his own broad river, and of Newhall by his little brook,. of Pickering in the halls of the nation, and of others, brilliant in church, state and profession, dotting the county with spangles of eminence. No doubt the farmers of England may be vigorous and apt enough to move toward a better civil liberty; but the farmers of Essex were never less than noble, and that without waiting for decree of Garter-King at arms, or patent from the Crown. I speak not of banquetings nor liveries, of servants' halls nor trappings heraldic; but of that nobility that enables the citizen to meet the monarch with calmness, and makes him to be ready furnished for his place in the nation's highest councils, whenever her call shall reach him. In the homes of such have always lain familiar to every hand and eye, the Bible and the Dictionary, the muse of Goldsmith and the profundity of Locke, the searching words of Jeremy Taylor

and the fiery visions of the Pilgrim in his progress. Their culture has been broad without multiplicity, and deep but not obscure. And this is the class—these are the men—of whom I say that they have stood behind and upheld the greatness of Essex, and propped her eminence wherever she has achieved it.

Need I reiterate, that this judgment is not for the flattery of the farmers that are its subject. I do but take them for an example, though I know not another so good, of a great and general principle. For if, in this favored and historic county, where letters have thriven, and arts have prospered, where Science has spread her broadest wing, and Philosophy wheeled forth like a conqueror,—if still this mass of quivering, vital thought, like the live and pulsating human flesh, has found within itself the solidities of agriculture, like the strong bone, staying the whole and guarding well the marrow of nervous feeling—if this be so with *us*, how much more shall all these things of liberal growth of the mind and spirit depend on the intelligent culture of the primal earth, in places where *that* is strong and they are only feeble?

Perhaps I need not further elaborate this argument. It may be admitted that the real strength and patronage of all that is refined in science and art rests in the sound sense and thrift of those who stand at the plow. It may be sufficiently obvious, that as the courses of architecture grow lighter and weaker upward, shading at length into mere decoration and ornament, so conversely, from the pencil of the artist and the quavering of the songstress, all human pursuit strengthens oppositely, till the foundation appears where no orator gesticulates and no trumpet is blown, but the cattle tug at the yoke, and the plain barn is crowded with that which comes of

three hundred annual days of well-reasoned labor. If so, I reach my theme. For with such a yeomanry before me, and such a historic enlightenment kindling in the very ground I tread, I stop and ask myself, as I ask you to-day to consider, *What are the relations of Agriculture to the best and highest civilization?*

The civilization of to-day is no doubt better than any the world has seen before. To say that there is no better still beyond and to come, would be too much; yet no man knows of it save by conjecture. We have to do with that of to-day as the best yet devised, and that for the security and promotion of which we are all obligated and responsible. If we analyze it, it is a composite thing, multiplied in parts, and full of dependencies. To deal with it in every aspect is more than enough for the wisdom of every statesman, and the acumen of every teacher. Yet, like all stupendous existence, the more it is studied the better it is known; and it may be more useful to work awhile at a few of its most salient points, and try to understand them, than to do nothing, on one hand, or, on the other, seek to do the whole when we cannot. And thus, considering the relations of agriculture to the best civilization, let me say, at the outset, that it is *The Nurse of its Truest Liberty.*

There may be in it something of imagination, but to me it always seems as if each craft of mankind bore upon its very face something of its spirit and social tendency. The artisan, even in his freest condition, acts and moves like a man employed under another, and too often, more than this, under the surveillance of his fellow-workmen also. The mere day-laborer, though with us the fact is denied, still wears the look that tells of submissive, unthinking muscle, and too nearly

affiliates him with the beasts he drives. The artist and man of imagination, with face half-spiritualized, shows yet in that face the deep uncertainties of his own living. And so of the rest. But he who stands upon his own acres bares his brow to heaven with another aspect. He stands nearer to a certainty. So far as human hands may hold it, the key of his life and welfare is in his own grasp, and he knows it. And thus he meets the world half-way; able, if need be, to retire to the fastness of his own economical home, and there defy the besiegers. They may sit before his walls while they will; but the rain and the sunshine are his, and the earth, despite of foes, shall give him always meat and drink in its season.

To prove the husbandman the original freeman might seem superfluous. The examples of the world and of history are almost too many. The freest people of Europe have perched themselves upon the Alps, where, though the cultivated crops are slender, the true agricultural spirit leads them, with free breath and step unfettered, to pasture their herds, and sing their *Ranz des Vaches* on the grassy slopes of Mount Rhigi and the Matterhorn. And shall we not recognize the fact, that those time-honored stern barons of England, who gave such resistless *dicta* to King John that he ground the chips of the wayside between his teeth for rage when he dared not deny them,—shall we not recognize in them the landed agriculturists of that day, and the progenitors of those whose influence has since turned that land into a garden of fruitfulness, and her laws into institutions of liberty?

I anticipate here an objection. It has been repeatedly said, for years past, that our Southern States stood, as an agricultural community, opposed in nature to the manufacturing people of the North. Indeed, all will remember the boast of

secession, that they *were* thus agricultural, and such a people could not be subjugated. Yet it was this same people who gave to the world the revolting spectacle of domestic slavery, and a great civil war waged for its defence.

But I see no incongruity. It is not fortunate for the body politic when any one industry grows to an inordinate or disproportionate bulk. The agriculture of the South was certainly in this position. There were not wholesome manufactures enough joined with it to make a stable combination, but it stood as a wall made wholly of mortar, an earthwork merely. And it were no wonder, if, on an agriculture thus overgrown and heedless of its natural associations, there were engrafted the false branches of oppression, fictitious license, and unlawful ambition. Had it kept to its true relationship, as that of our own section had been allowed to do, we should not have seen it fostering slavery, discouraging manufactures, nor despising liberal arts and education, even as it more than despised a free government and the rights of the people. But I hasten forward. A sound agriculture appears as *the Best Friend of Honest Trade.*

The highest civilization among men can, probably, never overtop the necessity of commercial traffic. No speculations of Fourier, no Republic of Plato, or Utopia of Sir Thomas More, has yet been able to explain away the need of mercantile exchanges of some sort among the people, and if so, there is almost as great need that they should be honestly conducted. And here I will ask only your attention to the facts, since I have not time to enter upon the argument *a priori*. Said the great Webster, in one of his moments of triumph, "There is Massachusetts, look at her!" Adopting his thought, I say, "There is American Agriculture, look at *her!*" What

is her position before the world to-day, in the time when dishonesty and brazen robbery have almost their own way, and more is written and printed upon financial criminality than was upon the breadth of the civil war a dozen years ago? What shall we say less than this, that the robbers and embezzlers, the rogues, burglars and defaulters, have *not been found among her followers!* We will not overpraise the farmer; but there is something about his calling that keeps him, apparently, out of, and aloof from, most of such criminalities as these. What it is, you can say as well as I; but certain it is, that this infection has broken out, specially, rather among the classes that cannot afford to wait for gain to grow by any natural seedtime and harvest, but thirsting, like Ortogrul of Basra, for that golden stream which is quick and violent, have broken away from the trammels of the even life of the husbandman, and thrown themselves into the vortex of speculation, high contract, and jobbery. A purely spirited agriculture is too good a friend to honesty to satisfy such; they turn their backs on the farms of inner New England, and, pressing into the cities and greater towns, seek for that fevery meat that alone can answer the appetite of a Tweed or a Winslow. I say that the fact that husbandry owns almost none among such misdoers, is enough to raise more than a presumption that the field and the pasturage are not good soils in which to grow a first-class rascality. The motive to all this obliquity seems, mostly, to be a restless haste for premature wealth; but the atmosphere of the farm is, doubtless, always rather that of contentment. There is meanness enough, usury enough, hard bargaining enough, among the agriculture of our country; but it does not tempt the cupidity of man like the brokers' board or the stock office. The nar-

row-souled man may rot his apples rather than lower his price, or bargain his corn to the whiskey-maker for a slight advance over the hungry of the land—these are bad enough—but they are legitimate and fair beside the traffic in building-jobs, the clandestine trade in patents and pardons, the corners in fancy shares, and the flying of "kite-paper." And again I say, the art of the husbandman is blessedly removed from these by its nature, and its influence on him must always be in the direction of an honest trade, that seeks to render equivalent for equivalent, and thus only. But I hold that Agriculture is related to Civilization, as *the Promoter of its Education.*

I am not about to open again the debates that have distinguished Massachusetts for the last thirty years, nor to bring forward for fresh worship the idea, that teaching is good only in proportion to its magnificence. I think no one will oppose me if I say that I recognize a true, real, natural education of youth, before, above and beyond, all special systems yet enunciated. It is that education that seeks to develope the young man or woman symmetrically, to give broadening and deepening views of life, its methods and its needs. It is that which tells the boy that patient growth is earliest perfect; but that soon ripe is soon rotten. It is that which encourages him to be excellent in something, but not wholly ignorant in anything. It is that which shows him that he has a perfect right to be President, but lays its hand on his head and prays God he never may wish to be. In a word, it is that which can instruct the child, and will, wherever it meets him, whether in the school-room palace, or the factory at noontime; whether in the woods by the sled, with the oxen chewing stalks in the snow, or at mother's knee by

the fireside, where Doddridge learned the story of the Cross, and West earned the loving kiss that "made him a painter."

Such, reduced to simple facts, is nearly the education that our own Essex has always encouraged. I will put this statement on trial for its verity, and any one may look up the evidence. We have not despised the college or the classics; yet the young men who from our midst have entered on them, have carried thither more of sound and useful education than they added thereafterward. It was learned at home, by snatches, after supper, or in the little common school, a mile from the house in summer, but surely two when the snow was deep. It was learned because it was hungered for, and not because it was fashionable; because the boy verily thought that strength and wisdom were the noblest attributes of man, and to these he labored gloriously to aspire. Such motives have for two hundred years urged the youth of Essex forward toward learning, and the result—is it not written and laid up in the archives of the nation and the world? Yet all this is not the way of merchants and manufacturers. It is hardly the method of the counting-room or the quarter-deck. But where you see the cows thick on the pastures, where you can count the corn-rows a mile off in spring, for freedom of weeds, and the apples are heaped under the autumnal trees as if busy ants had piled them,—there are boys who demand, and find out, *why* they carry one for every ten, and girls that, being taught the revolution of the earth, would at least get an idea that it turned over. But a step beyond this shows Agriculture as *the Stimulus of Science.*

The world is to-day proud of its science—proud of what it has learned of the laws of nature. It is so proud and so pleased with its scales and measures of the inanimate world,

that it aspires to place them on the pinions of Life, the rainbow of the Mind, and even the still small voice of Deity. I am not about to declaim at all against its follies, nor utter loud warning against its excesses; for that which is true shall alone endure, and that which it builds of stubble will surely come to nought. That the verities of science are a benefit to humanity, one must be weak indeed to deny; and of these no one is better prepared to see the value in practice than the tiller of the ground. For if it be the province of a true science to investigate and expound the laws of nature, surely the man who of all stands most near to her side will be the best customer in that mart. He talks with botanists, for he needs to know more and more of the structure and style of vegetation. He consorts with geologists, for the rocks are the original of soils, and to know something of the material is to command a surer result. He can welcome the chemist at all times, for what part of his calling does not need his lessons?—and whoever can teach him of climate and the atmosphere, is a friend in need, whether for drouth or storm.

We may say that some special lines of study fit better some other pursuit than this. The mariner has greater need of astronomy and the mathematics than the farmer; nor will the latter be urgent after the finer engineering, nor perhaps the profounder optical and electrical studies. But for science in general, and especially all that treats of organic and living existences, he is the man of strongest and most abiding appetite.

Let me be understood. Much has been said of "book-farming," and, if I mistake not as to its present popularity, the nays have it by a plain majority. Yet this term, applied as it usually is, to a merely theoretical agriculture, has no connection with science as I speak of it. For agriculture, of

all the arts in the world, is, and ever must be, thoroughly empirical. No rules for it can be stated beforehand that shall be general; no methods contrived that will work well always. The cultivator must experiment and try; compare and study results, and try again. He will not long believe with Liebig that the ashes of a plant contain all things needed for its growth, nor with later chemists, that the analysis of a handful of soil would give a certain indication of the composition of the whole field. He sees, with the plain eye of common sense, that in such a pursuit an infinity of causes must be concerned, and therefore the joint effect cannot be predicted, but must be always found by observation. And thus he is the man to encourage the study of all natural science, whether in the mutations of temperature, the probabilities of weather, the habits and movements of insects, the knowledge and agency of beasts and birds, the reactions of all chemical forces, and the growth of every green thing, from the hemlock to the herdsgrass. I might dwell here long; but I hasten to say that agriculture is *the Encourager of Art.*

Possibly I may here encounter a doubt; for one may ask if the painter, the poet, and the sculptor, were not always more at home and better welcomed in the city than the country, in the palace more than the homestead. This may be, and yet be more a statement of what has been, than of what might, or ought to be. For it is still true, that if the patronage of the artist be in the metropolis, his best inspirations are far oftener than otherwise drawn from nature unsubdued, or the gentleness of country life. And considering the insatiate and immortal character of that aspiration that makes the artist to be what he is, may we not reckon that as much for his encouragement that gives him food and material for thought,

as that which buys his works at a price in the shambles? Yet even this is not all my argument. I look out on the innumerable scenes of the country and the farmstead, full of beauty and significant of all that is lovely, and I say if the undevout astronomer is mad, what shall be said of the unartistic farmer? I know the yeoman is not blest with much leisure for the study of Raffaelle or Mendelssohn; he is not very familiar with the dialect of Tennyson, or of the sculptor's modelling-room; but he as well as any one, nay, better, can and does appreciate the sublime truth, that art is, rightly, only the visible expression of beauty, and that beauty is a high gift of God, which let no man despise.

It is the most cruel uncharity to assume that the heart of the husbandman is hard against the loveliness of art. I have been among such all my life, and know better. I heard a wealthy manufacturer say that he had been in the famous gallery at Dresden, but whether he saw the Sistine Madonna he was not sure, for it rained, and he was looking after his umbrella! I do not believe any farmer of Essex would have missed that picture, though some might have gaped a very little while they admired it. For who of all our people seize most greedily upon all such refinements when available, if not these? Who likes best to improve his place and make a graceful drive up from the highway to its door? Who will try to set his trees to the best advantage, and dispose his flower beds well before the house, for the finest effect of the posies that grow there, and of the matron and maidens that tend them? Who buys a good picture when he can, and a handsome book often, and is even willing to dare to look on a premium chromo, rather than have nothing of the kind? Take your fine performers and go among the farms of New England with a choice entertainment. You will bring to your

hall twenty cultivators for one of other callings, and their proportion to the whole population will be fifty per cent. greater than in any city you can visit. The man who has all these things crowded and piled along his daily path gets indifferent to them; but the yeoman's appetite is always sharp, and more than that, it is rarely unnatural.

After this outline of a proof that need not be further detailed or extended, I will leave it for your own judgment whether the natural influences of agricultural pursuits are not related to a high civilization in a way most favorable to the latter. Nor will I advance the question, almost impertinent here, whether such a civilization be not the most desirable of all things for human beings, dwelling together in anything called society. But a plain conclusion must follow. It may not happen, as matter per consequence, that the thoughts and habits of the yeomanry of the country will be fully up to the natural and theoretical demands of their pursuit. And therefore am I here to-day; not to deck your farms with rhetorical rainbows, nor flatter you with high commendation; but to show you that you have a duty, and that the circumstances of the age are making it more and more imperative.

The common trite expressions as to the antithesis of town and country, are not necessary to be here repeated. We are all well aware that the correcting, revising, recuperating force resides in the country, for the restraint of the hot and seething evils that breed so fast and foully in the cities. Nothing to-day holds the vicious multitudes of New York in check but the salutary thought and strong hand of the country behind it; and were that country more like New England in social character, there might be found resemblances between the two capitals where now there are only contrasts.

I speak for another reason. The next great period will no doubt witness large changes from the present social condition. For twenty years past, at least, the country and its pursuits have been constantly drawn upon—depleted—robbed of their natural reproduction by the factitious attractions held out by the denser communities, to induce the young to forsake the plough and hayfield, and join in the chase after wealth in an hour, and eminence in six lessons without a master. To such an extent has it gone that a smooth-faced boy, even, seeing in his folly no quicker method, resorts to train-wrecking, thinking in this bold way to force a large and sudden income without labor. But it seems as if the insane thirst that had driven men away from the sure and peaceful path, and made them cry, as did a distinguished politician of Maine, that he "within four years would be either in hell or in Congress," must soon experience a crisis. The land is, meanwhile, starving for labor, the sod gets thick on the old cornhills, and the fields that would give the tiller a safe and not too toilsome living, run to bushes, because he has gone to the city for more than a living and got considerably less than one. It is against this unnatural distribution of things that your efforts, O husbandmen of Essex, may well be directed. You are in part responsible for the leaning of this social tower, that threatens more its fall than does that of Pisa. The jobbing and managing crowds of State street and Wall street may boast of refined manners and elegant homes; I do not care: theirs is not a high, a noble, a beneficent civilization. They may display wealth and feed fat in luxury; but so could the courts of Pharamond and Charles II. and both were cursed with a corruption to which our own erratics even now seem tending. In your hands, I say again, is the medicine for such frenzies,

if you stand for the interests of agriculture, and if you deserve the character I have drawn; and the nation shall hold you responsible if it is not applied. The elements of a high civilization are nowhere more developed or more in the hands of the agricultural class than in Essex: let us see you strike an early blow at the false life that usurps the true vitality of the people. Open the resources of your lands and the encouragements of your towns, and try to draw back within wholesome and unfevered influences those who, in delusion and mistake, are thronging the streets of our cities, and daily falling backward in all that belongs to a lofty social culture. Cry to them, as you can well afford to do, that when God made man to dress the soil, he proved his perfect and sufficient wisdom. If you have in time past showed discontent yourselves, and told your boys that farming was poor business, retrieve your error before they are far gone in business worse than any farming can be. Call to them that contentment dwells indeed in the homestead; and as the faithful spies said of the promised land, "Come up and possess it, for we are well able to overcome it." Then, when by your judicious efforts, you have drawn back to your side some of those who have wandered away, may we begin to breathe a clearer atmosphere, and feel that the Simoom that is called Enterprise and means Madness, has passed us with its deadly heat. Then, if you have reasonable success, and others follow your example, when the great art of Agriculture, first made of the Almighty, has come more nearly to its true estimation among the people, may we hope for a pure and lofty civilization, for the prosperity of Liberty, Uprightness, Education, Science and Art, and that good Religion of God that surmounts and includes the whole!

THE EXHIBITION.

The Cattle Show and Fair was held at Danvers, Sept. 26th and 27th, 1876.

The entries in the several departments of the show were as follows :—

107		cattle of all kinds.
90		horses and colts.
60		swine.
38		sheep.
84		coops poultry.
23		ploughing teams.
7		agricultural implements.
14		carriages.
8		dairy.
49		bread and honey.
About 1500		plates fruit.
124		entries flowers.
75	"	vegetables.
117	"	counterpanes, etc.
4	"	articles manufactured from leather.
10	"	manufactured goods.
40	"	children's work.
177	"	fancy and works of art.

As the above list shows, the exhibition in nearly every department was very full and complete, the exception being a falling off somewhat of the number of cattle from the last show.

The show of fruits, flowers, and domestic products, at the Peabody Institute, is believed to be larger than ever before, especially that of fruits.

The exhibition of vegetables, in the society's tent adjoining, was remarkable for the fine specimens and great variety, that of J. J. H. Gregory embracing all the vegetables known in our markets, with many rare specimens not often seen there.

The ploughing and drawing matches showed great skill on the part of the contestants, and were witnessed by a large concourse of people.

The address by Mr. Tracy, found on the preceding pages, was listened to by a large number of people.

The society's dinner was partaken of by five hundred gentlemen and ladies, and was honored by the attendance of His Excellency Governor Rice and Staff, Hon. Charles P. Thompson, M. C., Mr. Baker, member of the State Board of Agriculture, and other distinguished men.

On the whole, the Fair was one of the most successful ever held by the Society, both in the value and attractiveness of the contributions and the number of people present from all parts of the county.

REPORTS OF COMMITTEES, &c.

FAT CATTLE.

Henry Gardner, Salem, pair of oxen, 1st prem., $12.

A. H. Gould, C. W. Lord, Horace Ware—*Committee.*

BULLS.

The Committee have made the following awards :—

For the best thoroughbred Bull, of any age or breed, with five calves of his stock not less than one year old,—to J. Longfellow, of Newbury, for his thoroughbred Jersey Bull, "Little Micawber," the special premium of $30.

For thoroughbred Ayrshires, two years old and upwards,—to Asa T. Newhall, of Newburyport, for his bull "Rob Roy," the first premium of $12.

For thoroughbred Jerseys, two years old and upwards,—to G. W. Russell, of North Andover, for his bull "Son of Rosa," the first premium of $12.

For thoroughbred Jerseys, under two years old,—to Francis R. Appleton, of Ipswich, for his bull "Royal Duke of Ipswich," the first premium of $6.

For thoroughbred Holsteins, two years old and upwards,—to Wm. A. Russell, of Lawrence, for his bull "Consul," the first premium of $12.

For thoroughbred Holsteins, under two years old,—to Wm. A. Russell, of Lawrence, for his bull calf "Brett," the second premium of $4.

The second premium, instead of the first, was given to the last named animal, not by reason of any deficiency in quality, but because, in the opinion of the Committee, he was too young to be entitled to the first premium.

In accordance with the laws of the State, and the rules of the Society, both in the best interests of the stock breeder, the Committee declined to consider the claims of any animal whose owners neglected to furnish "a written or printed statement of pedigree."

By order of the Committee,

HENRY SALTONSTALL, *Chairman.*

MILCH COWS.

The Committee on Milch Cows submit the following report:

For the best Milch Cow of any age or breed, with satisfactory record of her daily yield of milk for one or more years, —to William A. Russell, of Lawrence, the Society's *special premium*, for his Holstein cow "Lady Clifden," $25.

To this award the Committee think proper to annex Mr. Russell's statement, as follows:—

"Lady Clifden. No. 159, H. H. B. Imported from Midmond, North Holland, by Wm. A. Russell, October, 1874. Now eight years old. Dropped calf Feb. 1, 1875.

1875. Record of milk, twelve months, from Feb. 3, 1875:

February, (27 days,) - -	1600 lbs.
March, - - - - -	2093 "
April, - - - - -	1709 "
May, - - - - - -	1639 "
June, - - - - - -	1590 "
July, - - - - - -	1487 "
August, - - - - -	1380 "
September, - - - - -	1277 "
October, - - - - -	1277 "
November, - - - - -	1070 "
December, - - - -	831 "
January, 1876, - - - -	321 "
	16,274 lbs.,

or 7745 quarts in 363 days. Average, $21\frac{143}{363}$ quarts per day."

1876. "Dropped her calf May 8, 1876. Due to calve, April 4, 1877. Record of milk from May 23 to Sept. 1st, as follows :—

May, (9 days,) - - -	605 1-2 lbs.
June, - - - -	2052 1-2 "
July, - - - - -	1755 "
August, - - - -	1430 "
	5843 lbs. in 101 days

Largest yield in any one day, 75 lbs., or 35 5-7 quarts."

One of the committee witnessed the milking of this cow, one evening of the last summer, and confirms the truthfulness of the foregoing statement.

For the best Milch Cow, foreign, native, or grade, not less than four nor more than ten years old,—to Geo. W. Russell, of Lawrence, for his Jersey cow "Nellie Blenn, 2d," A. J. Herd Book. No. 1148. First premium, $12.

The following statement was submitted by Mr. Russell :—

Dropped calf, Nov. 13, 1875. Due to calve, Oct. 12, 1876.

Nov., (15 days,)	442 quarts.	Average per day,	29 1-2 qts.		
December,	837 "	"	"	27	"
January, 1876,	744 "	"	"	24	"
February,	630 "	"	"	22 1-2	"
March,	510 "	"	"	17	"
April,	427 "	"	"	14 1-4	"
May,	380 "	"	"	12	"
June,	300 "	"	"	10	"
July,	240 "	"	"	8	"
Total,	4510 qts.				

Her feed to 20th of May was clover, two quarts of meal and four quarts of shorts. From 20th of May to August 1, pasture only. Since August 1, two quarts of meal and four quarts of shorts.

Second premium, for best Milch Cow, $9, to Wm. A. Russell, for his Holstein cow "Maud Marion," No. 181, H. H. B.

This cow is four years old. Dropped her first calf January 28, 1875. In twelve months, as appears from statement made to the committee, she gave 11,112 quarts. Dropped second calf July 8, 1876. From July 12th to Sept. 1st, averaged 24 quarts per day. Feed, pasture and three quarts of grain per day.

For best thoroughbred Jersey,—first premium, to Francis R. Appleton, of Ipswich, $12, for his cow "Islip, 3d," No. 1883, A. J. C. C. Register.

For the cow that makes the most butter in any single week,—first premium, to Charles J. Peabody, Topsfield, $12.

H. G. Herrick, *Chairman.*

HERD OF MILCH COWS.

For the best herd of Milch Cows, not less than five in number, to be exhibited at the show, and a correct statement of manner of keeping and yield for the six months preceding given. 1st premium, $18; 2d premium, $12, 3d prem., $10.

The exhibitors were George W. Russell, Lawrence, and Charles J. Peabody, Topsfield.

Members of the Committee present, besides the Chairman, D. G. Todd, Wm. C. Sleeper, and E. G. Berry; and they were unanimous in their opinion that the statements did not comply with the above rule; and were therefore unable to award the premiums; but recommend that gratuities of $12 be given to both competitors.

This rule is subject to two interpretations: one, that the yield for the whole or any part of the six months may be given. Carrying out this principle, a cow may have been in milk only a week, or may have been dry all the time. The other, that the cows must have been in milk during the whole six months.

Your Committee took the latter interpretation. In conver-

sation with officers and members of the Society, they found that some agreed and others differed with their judgment.

Our regulations ought to be so plain that he who "runs, may read," and understand; and we do not admit that the above rule is one of that kind, as is shown by the different interpretations which may and have been put upon it. Moreover, it is not sufficiently explicit, it is too general, it does not require the minutiæ of management, keeping, etc.

We have examined the reports of our Society for the last five years, and have not found one statement of manner of keeping and yield from which the reader would derive any special advantage or instruction.

Here is the statement of one year:—

"Their keeping since June has been grass. They have averaged 10 quarts of rich milk per day, and from 45 to 50 pounds of butter per week during the season of grass;" yet on such a bare and incomplete record as this, the first premium was awarded.

In another year the first premium was awarded to a herd of cows with regard to whose manner of keep and yield there is no statement whatsoever.

Does not this show, either that this rule is considered of no consequence, or that its meaning is not understood?

No matter how good looking the individual animals in a herd may be, it is their record which ought to govern the Committee more than anything else, in judging.

Statements in regard to keep and yield of cows are of comparatively little value, unless they enter into the details, as to the measure or weight of food, measure or weight of product, manner of preparing and kind of food, time of feeding, etc. Moreover, the time of calving should be always stated.

On such a basis as this, the record of two or more herds may be easily compared, and a fair judgment arrived at; but if loose statements and guesses are allowed, the comparative merits are not easily recognized, and the public are taught nothing which can be relied on.

We have always supposed that the object of this Society was, on the one hand, by awarding premiums, to encourage the exhibitor; on the other, by publishing reports, to endeavor to instruct its members by giving trustworthy and valuable information. That both purposes may be accomplished more fully, the Committee recommend the alteration of the rule in regard to herds of Milch Cows, as follows :—

For the best herd of Milch Cows, not less than five in number, to be exhibited at the show, and a correct statement in writing of manner of keeping and yield for any successive six months between January 1st and September 20th of any year. Each cow must have been in milk at least three months. The statement must give every detail possible,—the measure or weight of grain or roots, an estimate of quantity or weight of hay, the measure or weight of product in milk or butter, manner of preparing and kind of food, hours of feeding, when last calf was dropped. The weight or measure of milk must be taken each week and stated in writing, then an average of the whole time may be given. An exact record of the daily yield of each cow would be preferred. 1st premium, $18; 2d premium, $12; 3d premium, $10.

An additional premium is also recommended. For the best herd of Milch Cows, not less than five in number, with statement as above, only extending over the period of one year. Each cow must have been in milk at least six months. First premium, $20. Second premium, $15.

If we make a comparison between the two statements handed to the Committee, we find that Mr. Peabody enters more into the details of management, etc., gives the time when the last calf was dropped—a very important matter. His cows yielded 378 pounds of butter and 550 quarts of milk. Allowing 12 quarts of milk to one pound of butter, the whole yield in milk would be 5086 quarts. Supposing the record of yield was made up to about Sept. 20th:

Cow No.	1	would have been	in milk,	150 days.
"	2	"	"	160 "
"	3	"	"	125 "
"	4	"	"	128 "
"	5	"	"	180 "
Total,				743 days.

Reckoning 5086 quarts as the yield of one cow for 743 days, we have an average of 6.84 quarts, or nearly 7 quarts per day. For 365 days, or a year, the product would be 2555 quarts, or 5493.25 pounds,—a fair record. We must bear in mind, however, that this was not the yield of one individual cow; but the concrete yield of five cows soon after calving.

Mr. Russell's foreman, Mr. Reynolds, stated verbally that three of his cows calved in January and two in June. Considering three cows to have been in milk 180 days, and two 90 days each, total 720 days, at his average of eleven quarts per day, would give a total yield of 7920 quarts, or 17,028 pounds.

Since August 1st, Mr. R. fed two quarts of meal and four quarts of shorts, besides corn fodder. Since August 1st, Mr. P. fed four quarts of fine feed, besides corn fodder.

Mr. R.'s cows' yield in milk far surpasses that of Mr. P.'s, and reckoning 7920 quarts as the yield of one cow for 720 days, or 4015 quarts for 365 days, would be considered a very large record for one individual cow.

The Committee make this report, without entertaining the slightest ill-feeling toward the exhibitors, or any member of the Society; but simply for the reason that they consider the "rule" is not clear in its meaning, and moreover does not enter sufficiently into the details of management, etc., which are necessary for the enlightenment of the public, and also for the basis of a fair judgment.

The Committee hope that the Trustees will, at least, take

such action as will make the matter clearer than it is at present, for the benefit of future exhibitors and judges.

J. D. W. French, *Chairman.*

North Andover, Oct. 12.

STATEMENT OF CHARLES J. PEABODY.

To the Committee on Herd of Milch Cows:—

I enter for premium my herd of six cows. For convenience of description, they are numbered from one to six, by cards attached to their horns. No. 1 calved April 20; No. 2 calved April 10; No. 3 calved May 15; No. 4 calved May 12; No. 5 calved Dec. 10, 1875. They were kept last winter on meadow and salt hay, with one feed (six quarts) of roots per day, and one feed of English hay to those giving milk.

This summer they have had a good pasture, with corn fodder at night, from August 1 to September 1, and four quarts of fine feed in the morning; since Sept. 1, corn fodder, both morning and night.

The calves were kept four weeks, excepting that of No. 5, which was sold young. They were worth at that age $7 each.

There has been made from these cows, since April 1 to date, three hundred and seventy-eight (378) pounds of butter, besides five hundred and fifty (550) quarts of milk used for other purposes.

Charles J. Peabody.

Topsfield, Sept. 25, 1876.

STATEMENT OF G. W. RUSSELL.

I offer for premium my herd of five cows, pure bred Jerseys. These were fed in winter with good hay, and two quarts of meal, and four quarts of shorts. With the exception of one cow, they gave milk up to calving, and calved between January and July. Their feed since May 20th has been pasture feed only until Aug. 1st. Since then they have had one quart of meal and two quarts of shorts twice a day, besides some

corn fodder. Since March 1st they have averaged eleven quarts per day. Measured their milk one week in each month.

G. W. Russell,
By Wm. B. Reynolds.

HEIFERS.

The Committee on Heifers would report that the stock entered for premiums was of unusual excellence, and gave the Committee a difficult task to decide on the relative merits of the animals.

They award premiums as follows :—

Thoroughbred Heifers under four years old, in milk :

Jerseys—1st premium, $12, to Francis R. Appleton, Ipswich, for his heifer "Bessie." Second premium, $6, to Francis R. Appleton, Ipswich, for his heifer "Molly."

Dutch—First premium, $12, to Wm. A. Russell, Lawrence.

Thoroughbred Heifers, one year old and upwards, never calved :—

Jersey—First premium, $6, to F. R. Appleton, Ipswich. Second premium, $4, to Frank W. Bly, Danvers.

Dutch—First premium, $6, to Wm. A. Russell, Lawrence. Second premium, $4, to Wm. A. Russell, Lawrence.

Heifer Calves, thoroughbred, under one year :

Ayrshire—First premium, $5, to J. S. Ives, Salem.

Jersey—First premium, $5, to George W. Russell, Lawrence. Second premium, $3, to Francis R. Appleton, Ipswich.

Dutch—First premium, $5, to Wm. A. Russell, Lawrence. Second premium, $3, to T. P. Pingree, Salem.

Native or grade Milch Heifers, under four years :

First premium, $12, to C. Gafney, Danvers. Second premium, $6, to S. F. Crossman, Swampscott.

Native or grade Heifers, one year old and upwards, never calved :

First premium, $6, to Martin Root, Newbury. Second premium, $4, to Charles Ham, Danvers.

Heifer Calves under one year old:

First premium, $5, to J. Longfellow, Newbury. Second premium, $3, to S. F. Crossman, Swampscott.

Jos. S. Howe, T. B. Fall, Benjamin N. Giles, S. F. Newman—*Committee.*

WORKING OXEN.

J. J. H. Gregory, Marblehead, first premium, $15; Chas. P. Preston, Danvers, second premium, $12; R. S. Bray, Newbury, third premium, $10.

WORKING STEERS.

D. C. Hathaway, Danvers, first premium, $10.

Joseph Kittredge, John Danforth, Edward Kent—*Committee.*

STEERS.

The Committee on Steers report that there was but one entry, and that of three-year-old steers, and award the first premium of eight dollars to George F. Mason, of Andover.

George B. Dodge, H. F. Longfellow, Jas. T. Carlton, A. P. Fuller—*Committee.*

STALLIONS.

There were fifteen entries. Premiums were awarded as follows:—

First premium, four year old stallion, H. E. Holt, Bradford, $18; second premium, four years old stallion, C. F.

Pendergrast, Salisbury, $12; third premium, four years old stallion, Wm. A. Kelcher, Lawrence, $10.

First premium three years old stallion, John Hathaway, Salem, $10; second premium, three years old stallion, J. P. L. Wescott, Newburyport, $6.

Wm. Cogswell, J. P. Cross, H. McGlue, O. S. Butler—*Committee.*

BROOD MARES.

The Committee on Brood Mares respectfully report:—

The number of mares entered for premiums was large, and the quality was remarkably good. It was difficult to decid upon the comparative merits of many of them, belonging as they did to widely different classes. The thoroughbred, the New England horse of all work, and the heavy Percheron grade of the West, were all represented. And the Committee, in arriving at their conclusion, felt obliged to consider each one of these various families. In awarding the premiums offered by the Society, they do not intend to disparage the unsuccessful competitors, many of which came very near the standard of excellence laid down by the Society. They were highly pleased with the gray mare of Henry A. Hardy, of Danvers, with a Patchen colt by her side; with the bay Patchen mare of John Gibney, with a colt by Salem Boy; with an admirable and good-sized mare of H. G. Kimball, of Bradford, with her colt by Conway; with the Cleveland bay mare of Wm. A. Russell, of Lawrence; and the black mare of George W. Russell, of Lawrence; and for these they recommend such gratuities as the Trustees may direct, and they consider them worthy of honorable mention. In view, however, of the rules of the Society, on the score of condition and soundness, they award the following premiums: To Franklin Alley, of Marblehead, for his thoroughbred mare, the first premium, $18; to Wm. S. Messervy, of Salem, for

his Morgan mare, the second premium, $12; to A. Knowlton, of Essex, for his gray mare, the third premium, $10.

Geo. B. Loring, John Hobbs, Samuel Moody, F. H. Allen, Jos. Longfellow—*Committee.*

FAMILY HORSES.

Charles H. Gould, Danvers, first premium, $18; E. W. Jacobs, Peabody, second premium, $12; John Hathaway, Salem, third premium, $10; John Swinerton, Danvers, gratuity, $5.

Jonathan King, *Chairman of Committee.*

FARM AND DRAFT HORSES.

Joshua Roberts, Gloucester, first premium, $15; A. T. Newhall, Newburyport, second premium, $12; Paul T. Winkley, Newburyport, third premium, $10; David Knowlton, Essex, fourth premium, $6.

B. Griffin, Silvester Dane, Moses Knowlton, J. B. Thomas, *Committee.*

PAIRS OF DRAFT HORSES.

Perry Knowlton, Essex, first premium, $15; Burnham Bros., Beverly, second premium, $10.

COLTS—FIRST CLASS.

The Committee on First Class Colts report as follows:—

They have examined seven colts, and in the performance of their trying duties, necessarily attending said examination, have come to the following result, to wit:—

Four Years Old—J. Grout, Danvers, first premium, $12; A. Knowlton, Essex, second premium, $8; J. H. Fitts, Topsfield, third premium, $5.

Three Years Old—J. F. Dane, Hamilton, first premium, $10; A. T. Newhall, Newburyport, second premium.

LEVERETT BRADLEY, *Chairman.*

COLTS—SECOND CLASS.

Colts Two Years Old—First premium to George Gibney, Salem, for his beautiful stepping colt, $8; second premium to Wm. Grover, Salem, $3.

One Year Old Colts—First premium to Hugh McGlew, Newbury, $8; second premium to George B. Martin, Danvers, $3.

B. F. Jenkins, Charles Perley—*Committee.*

SWINE.

The Committee on Swine have awarded the premiums as follows:—

Boars, Large Bone—First premium to R. G. Buxton, Peabody, Yorkshire, $10; second premium to A. T. Billings, Topsfield, Chester, $6.

Boars, Small Bone—First premium to A. T. Billings, Topsfield, Essex, $10.

Breeding Sows, Large Bone—First premium to T. A. Wilkins, Danvers, $10; second premium to C. F. Goodrich, Peabody, $6.

Breeding Sows, Small Bone—First premium to Patrick Kirby, Danvers, $10; second premium to Mrs. Elizabeth Sanders, Peabody, $6.

Weaned Pigs—First premium to P. L. Day, Bradford, $6; second premium to Daniel Carlton, North Andover, $4.

The Committee would make mention of the following contributors, and regret that no premiums were offered for their classes, and would suggest that the Trustees take some action on this matter:

H. G. Herrick, of Lawrence, had on exhibition six remarkably fine hogs, nine months old, grade Essex. These animals were too old to come under the head of weaned pigs, and no premiums are offered for fat hogs.

There were three pairs of pigs on exhibition: Charles Emmerton, of Peabody, one pair Yorkshires, twenty-five weeks old; M. G. Tenney, of Georgetown, one pair Berkshires, eleven weeks old; John L. Annable, of Topsfield, one pair Essex, twenty weeks old. These were very fine specimens of their respective breeds, and afforded a fine opportunity to judge of their distinctive merits.

M. Birmingham, of Salem, showed four Yorkshire pigs, six weeks old, weaned, that were worthy of a premium, but the rules that governed this committee distinctly state that the premium is offered for the best litter of weaned pigs, not less than four in number, between *two* and *four* months old.

W. J. Dale, Jr., *Chairman.*

SHEEP.

The Committee on Sheep have attended to their duties, and report as follows:—

For the best flock of Sheep, first premium, $10, to Francis R. Appleton. Second premium, $6, to E. W. Jacobs.

For the best Buck, $8, to Francis R. Appleton.

For the best lot of Lambs, not less than four in number, to Francis R. Appleton.

Charles C. Blunt, M. A. Plummer, H. M. Goodrich, Geo. Gutterson—*Committee.*

POULTRY—FIRST CLASS.

Light Brahma Fowls—first premium to O. Gowen, West Newbury, $2.

Light Brahma Chicks—first premium, to George Hobbs, Salem, $2; second premium, to C. P. Jacobs, Peabody, $1.

Dark Brahma Fowls—first premium, to C. P. Jacobs, Peabody, $2. Chicks—first premium, to C. P. Jacobs, Peabody, $2.

Buff Cochins—first premium, to T. P. Hale, Rowley, $2; second premium, to Arthur Elliott, Peabody, $1.

Partridge Cochins—second premium, to H. A. Southwick, Peabody, $1. Chicks—first premium, to H. A. Southwick, Peabody, $2.

Black Cochins—first premium, to C. O. Putnam, Danvers, $2. Chicks—first premium, to C. O. Putnam, Danvers, $2; second premium, do, do, $1.

White Cochins—second premium, to G. D. Walton, Peabody, $1. Chicks—second premium, to Neal Moynaks, Danvers, $1.

Geese, Hong Kong,—first premium, to Louis P. Hawkes, Saugus, $2; second premium, to Robert G. Buxton, Peabody, $1.

Ducks—first premium, to Louis P. Hawkes, Saugus, $2; second premium, to O. Gowen, West Newbury, $1.

Turkeys—first premium, to Geo. B. Dodge, Hamilton, $2.

James Flint, Jasper Rea, H. M. Berry, Farnham Stiles—*Committee.*

POULTRY—SECOND CLASS.

Plymouth Rock—George D. Walton, Peabody, second premium, $1; Chicks—A. S. Hill, Peabody, second premium, $2.

Dominique Fowls—John Swinerton, Danvers, first premium, $2. Chicks—John Swinerton, Danvers, first premium, $2.

White Leghorn Fowls—Joseph Bushby, Danvers, first premium, $2; H. A. Southwick, Peabody, second premium, $1. Chicks, Joseph Bushby, Danvers, first premium, $2; H. A. Southwick, Peabody, second premium, $1.

Dominique Leghorn Fowls—G. D. Walton, Peabody, second premium, $1.

Black Leghorn Fowls—G. J. Johnson, Rowley, first premium, $2; Allen Lee, Manchester, second premium, $1. Chicks—Abram J. Welch, Georgetown, first premium, $2; Allen Lee, Manchester, second premium, $1.

Spanish Chicks—George D. Walton, Peabody, second premium, $1.

Black Leghorn Fowls—D. B. Burnham, Essex, first premium, $2.

G. Poland Chicks—H. M. Larkin, Beverly, first prem., $2.

S. Poland Fowls—H. A. Putnam, Danvers, first prem., $2.

Dorking Fowls—W. H. Allen, Manchester, first prem., $2.

Game Fowls—A. A. Fowler, Danvers, first premium, $2; Chicks—A. A. Fowler, Danvers, first premium, $2.

Bantam Chicks—G. D. Walton, Peabody, first premium, $2; Thomas C. Berry, Peabody, second premium, $1.

S. Duckling Fowls—Charles H. Farmer, Peabody, first premium, $2; Oscar Gowen, W. Newbury, second prem., $1.

Pigeons—Jerry Monigan, Beverly, first premium, $2; J. S. Ives, Salem, second premium, $1.

Rabbits—Charles D. Winchester, Peabody, premium, $1.

JOHN SWINERTON, *Chairman.*

THE REPORT ON STEERS.

[Since the foregoing pages were printed, it has been ascertained that the cattle of Mr. Hathaway, exhibited as four years old, were six years old, and consequently are not entitled to the premium awarded them. Mr. Hathaway states that he was not aware of the mistake in the age at the time of entry.]

PLOUGHING—DOUBLE TEAMS.

First premium to R. S. Jaques and R. S. Bray, of Newbury, $12; second premium to D. C. Hathaway, of Danvers, $10.

Joshua N. Kent, W. A. Brown, Jos. Goodridge, D. G. Todd, D. J. Hale—*Committee.*

PLOUGHING—SINGLE TEAMS.

Charles P. Preston, Danvers, first premium, $10; Asa T. Newhall, Newburyport, second premium, $7; J. J. H. Gregory, Marblehead, third premium, $5.

Elbridge Merrill, D. Bradstreet, B. S. Barnes, M. B. Avery, Isaac F. Knowlton—*Committee.*

PLOUGHING—WITH HORSES.

Edward P. Perley, Danvers, first premium, $12; Asa T. Newhall, Newburyport, second premium, $10; J. Kavanagh, Wenham, third premium, $8; G. N. Ordway and M. H. Poore, West Newbury, fourth premium, $6; R. S. Bray, Newbury, fifth premium, $5.

W. B. Morgan, I. A. Rogers, T. G. Ordway, David Smith, J. D. Hildreth—*Committee.*

PLOUGHING WITH SWIVEL PLOUGH.

There seems to be an interest felt among manufacturers of the Swivel Plough to so perfect it that it will do its work as well, or better, than the common plough. In fact, they claim

that it does. But your committee to-day feel that that time has not fully come. From what knowledge we have acquired with regard to the Swivel Plough, we find that it makes better work in going one way than it does the other, and that it is not so easily managed as the common plough. When all obstacles can be overcome, and all the merits of the common plough be attained, I think that the farmers of Essex County, and of every other county, will feel that we have advanced one step forward in the means of cultivating our farms, as it would enable us to keep our ploughing more together, have a tendency to keep our land smoother and more free from ridges and dead furrows, &c.

Yet, in justice to the Charter Oak, that has been upon the field to-day, the committee feel that it has done its work well. There were but two entries made, that of D. C. Hathaway, of Danvers, with the Charter Oak, and that of Sylvester Dane, of Hamilton, with the Enterprise—a novel constructed plough, with two mould-boards and a swivel beam, but owing to the breaking of one mould-board before the trial, exchanged it for the Charter Oak, using the same kind of plough that his contestant used. The committee regret that there were not more competitors, and different kind of ploughs. Both did their work very well, but the displacing or breaking of a bolt on Mr. Hathaway's plough, detained and somewhat discouraged him, and consequently he did not do as well as he would under more favorable circumstances.

The committee feel justified in awarding to Sylvester Dane, Hamilton, two horse team, first premium, $10; D. C. Hathaway, Danvers, two horse team, second premium, $6.

There were also a pair of large, young Bulls, well trained, and did good work, belonging to W. A. Russell, of North Andover, to which the committee would have given a premium, had they come within the rules of the Society.

Horace C. Ware, Aaron Knowlton, Albert Kimball, Hiram A. Stiles, Richard Webster—*Committee.*

PLOUGHING—BY BOYS.

Special Premium, by William Sutton.

Aaron Winslow, Swampscott, first premium, $25; Charles S. Smith, Hamilton, second premium, $15; Daniel Young, Newbury, third premium, $10.

A. L. Moore, W. H. Kinsman, Otis L. Kent, James F. Gwinn—*Committee.*

AGRICULTURAL IMPLEMENTS.

The Committee on Agricultural Implements respectfully report:—

For the best collection of Implements and Machines, diploma and $15, to Whittemore Bros., Boston.

Best Ox Yoke, complete, to S. F. Ayers, Boxford, premium of $3.

Best Hay or Straw Cutter, premium of $3, to Whittemore Bros., Boston.

For Randal Pulverizing Harrow, gratuity of $3 to E. E. Lummus.

Gratuity of $3 to Whittemore Bros., for Smith Churn.

Parker & Gannett, Boston, gratuity of $1, for Hay Cutter.

For Galvanized iron-lined Cucumber Pump, gratuity of $3, to Whittemore Bros., Boston.

Gratuity of $2, to Parker & Gannett, Boston, for Collection of Implements.

A. B. Fellows, W. H. Felton, Aaron Low—*Committee.*

CARRIAGES.

Dole & Osgood, Peabody, best Top Buggy, $10, and best Market Wagon, $5; E. P. Whipple, Beverly, best Express Wagon, $8; H. H. Dempsey, Wenham, Express Wagon, $5;

W. B. Peart, Danvers, Express Wagon, $5; H. H. Pillsbury, Danvers, Display of Carriages, $5; C. W. Bruce, Peabody, Express Wagon, $2.

Aaron Sawyer, David Stiles, Henry Hobbs, R. A. Smith, T. K. Leach—*Committee.*

DAIRY—BUTTER.

Wm. H. Allen, Manchester, first premium, $10; Mrs. L. Lefavor, Danvers, second premium, $8; Mrs. Farnham Stiles, Middleton, third premium, $6; G. W. Russell, North Andover, fourth premium, $4.

Jos. Knowlton, T. K. Bartlett, John Price—*Committee.*

BREAD AND HONEY.

The Committee on Bread and Honey would make the following report:—

There were thirty-seven entries of Bread and Cake, three of Honey, and nine of Preserves, and they award the followlowing gratuities:—

To H. Beal, Danvers, Bread, $2; Abbie E. Elliott, Mrs. George C. Forest, Mrs. George Elliott, Mary Underwood, Josie Shea, Bridget Donovan, Gertrude Spring, all of Danvers, Bread, $1 each; Mrs. E. Walden, Danvers, Brown Bread, $1; L. S. Moore, Danvers, Rolls, $1; Kate Cremins, Danvers, Bread, $1; J. Hale, Jr., & Son, Georgetown, for Fancy Cakes and Pastry, $3; Jessie E. Abbott, Danvers, Loaf of Cake, $1; Dean Perley, Danvers, Honey, $1; E. E. Porter, Danvers, Honey, 50 cents; J. F. Rabardy, Manchester, Honey, 50 cents; R. P. Roberts, Danvers, Preserves, 50 cents; Mrs. Elnathan Dodge, Danvers, Canned Fruit, 50 cents; Dean Perley, Danvers, Preserves, 50 cents; Anna Fiske, Danvers, Jelly, 50 cents.

J. H. Cheever, *for the Committee.*

PEARS.

Your Committee on Pears have attended to their duty as well as they could under the present system of showing fruit, and would make the following report:—

There were 83 exhibitors, from 17 towns and cities, showing 420 plates. The award of premiums is as follows:—

T. K. Bartlett, Newburyport, Bartlett; E. Bradstreet, Salem, Belle Lucrative; George Pettengill, Salem, Beurre Bosc; Peter Wait, Danvers, Beurre Clairgeau; George Pettengill, Salem, Beurre d' Anjou; A. J. Hubbard, Peabody, Beurre Superfin; Henry V. Buxton, Peabody, Buffum; Peter Wait, Danvers, Clapp's Favorite; John S. Ives, Salem, Duchess d' Augouleme; John V. Stevens, Peabody, Dana's Hovey; A. J. Hubbard, Peabody, Doyenne Boussock; Wm. Huff, Newburyport, Maria Louise; T. C. Thurlow, West Newbury, Howells; Benj. P. Ware, Marblehead, Lawrence; John V. Stevens, Peabody, Louise Bonne de Jersey; Peter Tracy, Salem, Seckel; George Pettengill, Salem, Sheldon; J. Henry Hill, Amesbury, Urbaniste; George Pettengill, Salem, Vicar of Winkfield; Wm. Huff, Newburyport, Winter Nelis; B. P. Ware, Marblehead, St. Michael Archange; Wm. Huff, Newburyport, Golden Beurre Bilboa; G. W. Taylor, Peabody, McLaughlin; E. Bradstreet, Danvers, Onondaga; Peter Waite, Danvers, Paradise d' Autumn—each first premium.

For the best collection of other varieties, J. Henry Hill, Amesbury, Glout Morceau; W. H. Huse, Newburyport, Kirtland; J. Henry Hill, Amesbury, Andrews—$1.50 each.

For the best collection of twenty varieties, J. Henry Hill, Amesbury.

For the best collection of fifteen varieties, Wm. H. Huse, Newburyport.

For the best collection of ten varieties, A. J. Hubbard, Peabody.

For best twenty-four specimens, T. C. Thurlow, West Newbury, Beurre d' Anjou.

Gratuities: Peter Waite, Danvers, Bartlett; E. B. Currier, Lawrence, Lawrence; Sherman Nelson, Georgetown, Parsonage; A. J. Hubbard, Peabody, Duchess; W. H. Huse, Newburyport, Seckel and Duchess; J. Henry Hill, Amesbury, Nouveau Poiteau; C. H. Brown, Danvers, Lawrence; A. H. Gould, Topsfield, Beurre Diel; Franklin Upton, Danvers, Sheldon; E. A. Perry, Danvers, Dix; Andrew Lackey, Haverhill, St. Michael.

J. Henry Hill, Hiram Torr, Thomas Hale, Geo. W. Gage, *Committee.*

APPLES.

The principal contributors in this department of the Fair were: J. H. Hill, Amesbury, 31 plates; James Flint, Middleton, 31; Peter Wait, Danvers, 30; B. P. Ware, Marblehead, 26; T. K. Bartlett, Newburyport, 20; D. W. Low, Gloucester, 20; John A. Hoyt, Georgetown, 19; Elisha Hyde, Danvers, 17; Geo. W. Taylor, Peabody, 16; Aaron Low, Essex, 15; William E. Killam, Boxford, 14; John H. Sears, Danvers, 12; J. R. Allen, Manchester, 12; T. C. Thurlow, West Newbury, 11; J. W. Porter, Danvers, 11; Wyatt Woodman, Danvers, 10; making 16 exhibitors of 10 plates, or upwards, each, (representing for each plate a different kind,) with 2 of 9 plates each, 1 of 8, 3 of 7, 2 of 6, 6 of 5, 8 of 4, 15 of 3, 18 of 2, and 61 of 1 plate each, making 132 exhibitors of 558 plates, divided among the cities and towns, with the amount of premiums and gratuities awarded as shown in the following table:—

City or Town.	No. of Exhibitors.	No. of Plates.	Amt. Prem's.	Amt. Gratuities.
Amesbury,	1	31	$13.00	
Andover,	1	1		$1.00
Beverly,	1	3	1.50	
Boxford,	1	14	1.50	1.00
Danvers,	73	230	34.00	1.00
Essex,	1	15		3.00
Georgetown,	2	20		3.00
Gloucester,	2	21	Hon. Mention.	1.00
Groveland,	2	3	4.50	
Haverhill,	1	1		1.00
Lawrence,	1	1	1.50	
Manchester,	2	13	1.50	
Marblehead,	1	26	7.00	
Middleton,	3	35	6.00	4.00
Newburyport,	4	34		4.00
Peabody,	18	48	10.50	3.00
Rowley,	4	8		
Salem,	2	8	4.50	
Topsfield,	2	10		
West Boxford,	1	4		
West Newbury,	3	15	10.50	
Wenham,	4	9		
Unknown,	2	8	1.50	
	132	558	$97.50	$22.00

Your Committee awarded for the best twelve specimens of the following varieties which have been recommended by the Society, for cultivation in Essex County, premiums of $3 each,—to Thos. J. King, W. Newbury, Baldwins; E. Bradstreet, Danvers, Danvers Winter Sweet; Mrs. A. P. Swinerton, Danvers, Drap d'Or; C. H. Brown, Danvers, Hubbardston Nonsuch; James Flint, Middleton, Hurlburt; Abijah Fuller, Middleton, Kilham Hill; Peter Wait, Danvers, Ladies' Sweeting; Patrick Tracy, Salem, Porter; B. P. Ware, Marblehead, Pickman's Pippin; T. C. Thurlow, West New-

bury, Roxbury Russet and Rhode Island Greening; Peter Wait, Danvers, Seaver's Sweet; J. B. Marston, Danvers, Sweet Baldwin; A. J. Stetson, Danvers, William's Favorite; D. H. Stickney, Groveland, Gravenstein; Francis P. Putnam, Danvers, Hunt's Russet.

For twelve specimens of any other variety,—$1.50 each, to John H. Sears, Danvers, Blue Pearmain; D. R. Parker, Groveland, Northern Spy; J. R. Allen, Manchester, Golden Russets; C. K. Ordway, West Newbury, Vermont Orange; James P. King, Peabody, Cloth of Gold; Ann Collins, Danvers, Fall Harvey; J. W. Trask, Beverly, Baker Sweet; John S. Ives, Salem, Osgood's Favorite; Nathan Bushby, Peabody, Fameuse.

For best collection of twenty varieties,—premium of $8 to J. Henry Hill, Amesbury; fifteen varieties, $6, to Peter Wait, Danvers; ten varieties, $4, to B. P. Ware, Marblehead.

Gratuities were awarded, $3 each, for collections,—to Aaron Low, Essex; Jas. Flint, Middleton; John A. Hoyt, Georgetown; T. K. Bartlett, Newburyport; Geo. W. Taylor, Peabody;—and David W. Low, Gloucester, received honorable mention for his collection not entered for competition.

For the best twenty-four specimens of Apples, a premium of $6 was awarded Samuel Newman, of Peabody, for an apple unknown to fruit-growers present, but was so excellent in size, looks and quality, that the Committee unanimously gave it the name of "Sutton," instead of the name attached, which did not belong to it.

For twenty-four best specimens of any variety of Crab Apple,—to A. P. Blake, Red, $1.50; Wm. E. Kilham, Boxford, Siberian, $1.50; Solomon Fuller, Danvers, Red, $1.00. For the best collection, to J. Henry Hill, Amesbury, $5.

Gratuities of $1 each were awarded to Wm. E. Kilham, Boxford, Golden Russets; James Flint, Middleton, Sudbury Sweet; Aug. Verry, Danvers, President; Andrew Lackey, Haverhill, Porter; T. K. Bartlett, Newburyport, and Mrs. Susan A. Stanwood, Gloucester, Gravensteins.

In presenting the above list of premiums and gratuities awarded by your Committee, we wish to state that it was almost impossible that full justice to all should be done, with 558 plates of Apples of such good quality and of so many different varieties, scattered, as they were, among Pears and other fruits, over six long tables, without regard to kinds. Is it not too much to expect, and too much to impose upon this or any committee, in the limited time assigned them? We at least think so, and as Chairman of this Committee, this year's experience added to the experience of last year as Chairman of Committee on Grapes, Peaches, and Assorted Fruits, causes me here and now to protest against the manner of arranging and displaying the fruit upon the tables of the Society, causing such laborious and unsatisfactory work for your Committees, who believe it a necessity that a radical reform should be made in this direction, if it expects faithful service from its committees, and justice dealt out to its exhibitors. We therefore would recommend, what has already been adopted in some societies, the plan of having stands set upon the tables, labelled with the variety or kind of fruit there exhibited, with rods to lay across the table to separate each variety. By having *all* of each variety by themselves so labelled, the kind of fruit and variety can be easily found, and when found the best can be easily selected, as all the plates of that variety are together for comparison; while as the tables are now arranged it is simply impossible for any Committee on Fruits to perform their duties in the time allotted for it, and do justice to all the exhibitors; the labor being so tiresome and tedious that it is a wonder that men are found interested enough to undertake it. We consider that an exhibitor obliged to exhibit fruit in a round dish, or emptied loose upon the table, is not treated with equal fairness with those using the regular plates of the Society; and therefore the Society should provide plates enough of its own for all to use, and we would recommend that it do so before another season. We also think more notice ought to be taken

by the Trustees of the reports of their Committees, and where recommendations are made in them they should be noticed and acted upon, even if not adopted. Where such notice is not taken, you add another discouragement to a faithful Committee.

About Apples and their culture, your Committee, through their Chairman, tried to get the experience of every exhibitor, that their statements might be condensed and put in tabular form, that comparisons could be made more readily, and the information desired found separated like grain from its chaff; but the responses made to the questions, *asked of all*, have been so few that these statements are appended to this report for its readers to do their own sifting, which will be found to recommend as the best and most profitable Apples for raising in this County, the Baldwin, Hubbardston Nonsuch, Gravenstein, R. I. Greening, Danvers Winter Sweet, Red Astrachan, Hunt's Russet, Roxbury Russet, Porter, and William's Favorite.

Coal Ashes have been tried by some to their apple trees with very satisfactory results. The reports on Peaches last year, showed that coal ashes around peach trees had proved beneficial. If more experiments were made with coal ashes, we should find more virtue in it for tree and plant life than it has been supposed to contain. Salt has been used in manure with beneficial results to the trees.

We are led to think that pine trees are a great preventive of the ravages of the canker and currant worm, as some orchards with plenty of pines near them are not visited by them. Will our apple-growers notice this, and if such is generally the case, make it known to our Secretary, that experiments may be made with pine boughs as a preventive. Printers' Ink is universally considered the best protector yet known for apple trees. Mathews' protector has proved itself an injury to the trees, in one locality at least, trees having been badly injured by their use.

Your Committee found, among the others exhibited, a most excellent apple, very large and handsome, crisp and juicy, with a very fine flavor; it being entirely unknown among the fruit-growers present, who, with the Committee, tested its eating qualities. The name given to it by the exhibitor being considered incorrect, your Committee unanimously decided to name it for one so long identified with and loved by our Society; we therefore gave it the name of the Sutton Apple, and as such it will be extensively cultivated for its worth.

The exhibit of apples by our Society, in size and good looks, was worthy a place second to none we saw at the Centennial Exhibition, though the *average* size of some may have been larger from the States in the prolific West; yet, in beauty and keeping qualities, our apples beat them. Canada made a fine show of apples, and in plums she excelled all competitors, showing that *we* may hope yet to regain here this delicious fruit, ripening between the cherry and the apple, which has been so profitable in this County in the past, and which our Society should offer special inducements to promote their cultivation, that eventually a remedy for the circulio and black knot can be found.

A variety of opinion prevails in regard to the expediency and benefit of root pruning. We have found in ploughing an old orchard, breaking off roots of various sizes, that the trees since have started with fresh vigor in growth, producing much larger apples, with less tendency to drop, than before.

We have also found an excellent preventive from the ravages of ground mice on young trees, to be a couple of shovels full of fresh cow manure put around the butt of the tree late in the season.

We were in hopes to draw out from the experience of so many different fruit-growers individual experiments and results, which would in the aggregate furnish information to our Society of the most valuable kind; but the exhibitors were not so interested in furnishing it as your Committee in

seeking it, although we believe it one of the requirements of the Society. However, enough valuable information has been furnished to interest and instruct others, and we trust that hereafter exhibitors, especially those receiving awards, will feel it a pleasant duty to forward to the Chairman of the Committee, soon after the close of the annual exhibition, an unsolicited statement in regard to their exhibits, whether it be fruits or anything else, with items of their own experience which may benefit others, thus adding to the stock of knowledge for the procurement and dissemination of which our Society was formed.

Respectfully submitted for the Committee.

DAVID W. LOW, *Chairman.*

REPORT OF MRS. LUCY J. PRATT, OF DANVERS CENTRE.

DANVERS CENTRE, Oct. 23, 1876.

D. W. LOW, ESQ.:

SIR: We received your circular, and although we have no real report to make, will cheerfully and briefly answer your questions as far as we may be able.

Our orchard is small, only about 34 apple trees, with some 14 varieties. The soil is heavy and black. The trees are nearly all in mowing field, and no particular enriching is used except an occasional top-dressing of good stable manure; no digging round the roots or other means are used,—they are simply let alone.

Some half-dozen of the trees are quite old, but the remainder are young, very fair shape, flourish well, and bear well. Of the starting of it I cannot say, except that no particular pains were taken with it above the average.

To the question of caterpillars and canker-worms I must say, yea, yea.

The pill we prepare for caterpillars is simply a bristle brush on a pole,—give it a few good twists, and step on them.

The way we doctor canker-worms is much the same as everywhere, but ours may differ in some respects. We use for protectors, instead of the tarred paper, enamel cloth, such as wagon tops are made of; then spread on the printing ink as often as it requires, being sure, however, to keep it moist all the time. Our neighbors use the paper, and are obliged to renew every year, while our enamel cloth will last two years, and perhaps longer. The cost of course is more in the beginning, but we think will be cheaper in the end. I think no others have used this cloth in our neighborhood, except on my father's and our own trees. But little pruning is done, enough to keep them in pretty good order and shape.

The wormy fruit we keep picked up, and is used for animals.

To the question of the five varieties considered the most profitable, with my limited knowledge I would say, for early, the Astrachan would lead; it is well and favorably known,—good cooking and good looking, as well as good selling, but rather short-lived. Of early fall the Gravenstein is our particular favorite, being a handsome color as well as a beautiful eating apple, and for cooking seems to us to be unsurpassed. We had some 37 bushels from our little orchard this year, and they would sell in market when others would hardly get a passing glance. They are very free bearers, and we think they are THE fall apple.

The Hubbardston is a fine large apple, also a very free bearer. What it lacks in richness of color, it makes up in size; finds a ready market and cooks well. This year ours have been uncommonly good. William's Favorite is as bright an apple as one would wish to see, and is good to eat, too, but wants to be eaten raw. Danvers Sweets are, according to our judgment, good as any, but sweet apples never seem to be very profitable. People do not seem to have any idea what a variety of uses can be made of them in cooking.

Of winter apples we are still old-fashioned enough to cling

to the Baldwin, which seems to me to be an apple that one does not tire of as we do of many of the newer sorts.

To speak lastly of a good winter eating apple, none is in such favor in our immediate vicinity as the Hunt Russet,—a smallish russet apple, smooth and fair, and very uniform in size. Will keep *good* until apples come in the summer. This kind cannot be too highly spoken of. They sell as readily as bakers' turnovers at cattle show,—which is saying a good deal for an *apple*. Of the ten varieties, I should say, Astrachans, William's Favorite, Gravensteins, Hubbardstons, Danvers Sweets, Fall Harveys, Sweet Baldwins, Baldwins, Roxbury Russets, Hunt Russets, Greenings.

These seem to us to be the leading kinds, but there are hosts of others with which I am not familiar, and may be better than many of those I have spoken of; but I think I was only asked to tell what I knew, so I think my duty is done.

This is my humble opinion, humbly expressed. For what it is worth take it.

STATEMENT OF FRANCIS S. LOVETT, OF BEVERLY.

I have sixty-five trees. Fifty are young, on light land, with sand or gravelly subsoil. Fifteen old trees are on a rocky piece of land. I have thirteen kinds; have not manured the old trees, but the young orchard I have ploughed, manured, and planted, as much as possible. I came here about ten years ago, found the trees in grass land, growing but very little. Ploughed up and have kept it ploughed up since then. I cannot tell how the orchard was started. The trees have grown finely, and bear well of an extra quality of apple, mostly Baldwins; have not been troubled by canker worms; a few borers in old trees; have had an extra quantity of caterpillars this year, especially this fall. I think the best of way to get rid of them is to kill them morning and evening,

when in their web, as soon as they make their appearance on the tree. I do not believe in too close pruning; would prune about the first of June, as the wounds heal better at that time. My wormy apples are fed to cows and pigs; when the apples are fit, into cider.

I should say Early Bough, Red Astrachan, Hubbardston Nonsuch, Gravenstein, Hurlburt, Minister, Ladies' Sweeting, Baldwin, Northern Spy, Roxbury Russet, and Hunt Russet, are the most profitable in this County. The best for the table are Early Bough, William's Favorite, Hubbardston Nonsuch, Gravenstein, and Minister. Early Bough is one of the best sweet apples; good, constant bearer. William's Favorite is a splendid apple, but requires strong soil and high culture to perfect the fruit; it is very apt to be wormy in some locations; it is a good bearer. Hubbardston, a fine apple, and an extra good bearer (with me bears every year); keeps well; I have seen apples of this variety as late as March. Gravenstein, a very fine apple, good bearer, will sell as well or better than most any other variety. Minister, a thin-skinned, tender, acid apple, very nice when well ripened; an enormous bearer; requires very careful handling; will not do to "hand-pick" off the grass, as a great many have done this year. The Northern Spy and Roxbury Russet are both open to objections; both require a strong, rich soil to get fine fruit. A more juicy, better flavored apple than the Northern Spy cannot be found; good for cooking as soon as they are large enough, and will keep till June or July, with a good fresh, brisk flavor. Roxbury Russet, apt to be small and wormy on old trees; still it is so well known that there is no trouble to sell good ones at any time. Hunt Russet is a great bearer; fine, tender, apple, objected to by some as a market apple on account of its size; a fine apple to keep.

STATEMENT OF J. M. ALLEN, OF DANVERS.

We have one orchard, consisting of eighty young trees, Baldwins and Danvers Sweetings mostly; and then we have scattering trees of different varieties,—Porters, Ministers, President, Pumpkin Sweets, Northern Spy, and Gravenstein,—amounting in all to about one hundred and thirty trees, twelve of them very old.

The best trees are on light, gravelly soil. They are enriched in the spring with common barn manure. Our best Baldwin apples this year were enriched with coal ashes; some of them weighed three-quarters of a pound. We are not troubled with apple worms to any account; we prune in April, and pull all the suckers we can by hand. We feed out the wind-fall sweetings, and make the sour ones into cider for vinegar. *We don't drink cider.*

For market, we consider Gravensteins as good, or better, than any other fall apple, and Baldwins for winter; though for my own eating I prefer Greenings the first part of the winter. We have this year ninety barrels of very large apples, twelve of which are Danvers Sweetings. The Baldwins are uncommonly large and fair, although I have noticed that they are not so red as the smaller variety. We think if the Committee on Fruit could have seen our orchard, we should have had a premium.

STATEMENT OF ABIJAH FULLER, OF MIDDLETON.

On my farm I have about one hundred apple trees of about a dozen different kinds, the principal of which are Baldwins, Danvers Winter Sweet, Hubbardston Nonsuch, Kilham Hill, Rhode Island Greening, Harveys, both summer and fall. My trees are mostly young, and I do not enrich them only by ploughing among them. The soil in my orchard is rather gravelly. I generally prune my trees in winter or very early spring. I am troubled but very little with canker worms,—

seldom see them,—and only to a small degree with caterpillars, and these I soon rid myself of by clearing their nests from any trees. My wind-fall apples I usually make cider of. My orchard I think bears well, in comparison with my neighbors. I generally have a very full crop the bearing year, and enough for family use the odd year. As for the particular kind of apple that is most profitable for me, I think the Kilham Hill is one of the best fall apples. Mine are great bearers, as I always have some every year. They have nothing done for them but pruning, as they are in a gravelly pasture by themselves, on a side hill. I cannot so much as plough among them, and as I always have good fair apples and a good crop, I think gravel and sandy soil best suited to that particular apple.

STATEMENT OF PETER WAIT, OF DANVERS.

In answer to the questions put to me by the Committee, I will say that I have about forty apple trees and twenty or more kinds of apples. My soil is mostly gravelly, with a strong clay sub-soil. In regard to enriching, I think one of the best fertilizers is glue dross. I have used much tan-yard waste, such as old tan, lime and hair, but to quicken and warm up my trees, I use night manure. I apply it in the fall as a top dressing.

My trees are mostly thirty years old, and upwards. In regard to planting, I made use of no science, but simply dug a hole sufficient to receive the roots, without manure or any previous preparation. My treatment ever since has been top-dressing, keeping them clean and well pruned. The borers have been quite a trouble to me. I consider them the most destructive enemy to the apple-trees we have to contend with. The best treatment for them is a free use of soap about the time they hatch.

After using Mathews' protector for two or three seasons, I have resorted again to printers' ink for the destruction of the canker worms. The caterpillar with me has almost become extinct. Cluster worms and fall caterpillars are easy to destroy.

I prune my trees any time when convenient, except large limbs, which I cut generally in the fall or early winter. I keep my trees well pruned, taking off all useless twigs and spurs. Wormy fruit I collect some three or four times in the course of the season. I sell the best for what I can get, and what is not sold or given away to those that have none, is thrown into the hog-pen.

The best apples for cultivation, all things considered, I give the following: Baldwins, Rhode Island Greenings, Danvers Sweet, Seaver Sweet, Fall Harvey, Sweet Baldwin, Hunt Russet, Roxbury Russet, Northern Spy, Garden Apple, Hubbardston Nonsuch, Ben. Apple, Gravenstein, and Porter.

For table use I give in order as they come: Early Harvest, Red Astrachan, Porter, Gravenstein, Fall Harvey, Minister, Hubbardston, Baldwins, Greenings, and Hunt Russet.

I will not speak of the peculiarities of any except the Garden Apple. This apple seems to be but little known, yet I knew it when a boy, but, like the Hunt Russet, it was kept in obscurity. I believe I was the first to introduce the Hunt Russet into the nursery. In its season the Garden Apple is the best for culinary purposes, growing very large and fair, and a great bearer. They come early into use, and last until Thanksgiving. It is highly worthy of cultivation, and should be encouraged by our Society.

I think our premium list ought to be revised, both apple and pear, dropping some and adding others.

STATEMENT OF GEORGE W. TAYLOR, OF WEST PEABODY.

PEABODY, Oct. 16th, 1876.

D. W. LOW, ESQ.,

Sir:—Your communication of Oct. 11th arrived, and as you request, I will take this early opportunity to answer some of your inquiries. In the first place, I have some three hundred apple trees on my premises, among which there are about thirty varieties. My soil is a deep loam, rather rocky, with many large bowlders. The subsoil is a gravelly loam, which is underlaid by a pan of clay gravel that is almost as hard as the stone itself. A smart blow with the pick cannot penetrate it more than an inch or so. My land is not very apt to suffer much from drought. I have not been in the habit of applying any special manures to my orchard or among the isolated trees that are scattered over my farm.

When I plough up the ground among the trees, I usually plant some crop, such as corn, cornfodder, or potatoes, for a year or two, then lay down to grass. All the manure my apple trees ever get is applied when my land is under the plough. Before leaving this portion of the subject, I will add my word in favor of mulching among trees. Too much, in my opinion, cannot be said in favor of the practice, and no work in the orchard will repay the owner so large a percentage on time and expense. Any old rubbish that is always accumulating about a farm will answer, yet we prefer old hay or weeds. Any of the following substances might be employed for this purpose: potato vines, cornstalks, woodwax, or old tan. And I have known the pomace from the cider press to succeed admirably. One of my neighbors has used this for several years as a mulch, and I have noticed that his apple crop has been much improved, both as to size and quantity, where he liberally mulched his trees. I knew an instance, where the ground under quite a large apple tree was covered over with slabs for several years, that it produced enormous crops of fruit much larger and fairer than that produced before the slabs were piled under the tree.

There are trees on my place, ranging from those but a few years set, up to the old hoary-head, that must have stood the wear of time for a century at least. There is a young orchard of about seventy trees, that was set out in the years from 1855 to 1860. These trees were purchased from the proprietor of a nursery adjoining the lot upon which my orchard stands. This orchard has been cropped ever since being set out, either with hoed crops or grass.

I have never been bothered much with the borer or caterpillar. Either can easily be gotten rid of, if proper care is taken at the proper time. To prevent the borer, it is of the utmost importance to keep all the grass and weeds removed from near the trunk of the trees, thereby destroying all chance for a safe harbor for the embryo borer. Caterpillars can be destroyed by two or three thorough cleanings of the trees. But canker worms are worse than all the other enemies of the apple combined. No remedy that is within the reach of farmers has as yet been discovered that will effectually keep them down. The patent tree protectors are much too costly, and require too much tending to ever become of much benefit to the fruit grower. They may do well in small private gardens, where the owner has an eye on them several times a day. Tar, or printer's ink, applied to the trunk of the tree, is the cheapest, most effectual, and surest method that can be adopted to rid the apple orchard of the scourge. I am of opinion that it would be of decided advantage to all concerned if one-half at least of all our apple trees were cut down and removed. I believe that an apple tree lasts and bears fruit with any profit to the owner for only one generation. Even if they do live along and produce, it is only as an unsightly and hollow-hearted nuisance, where grubs and vermin of all kinds seek a home to breed their kind, and from which to sally forth and attack the young orchards. Better far it is to remove the old wornout trees, and take better care of the young and vigorous.

As to pruning, a little each year is the best; thereby avoiding the necessity of removing large branches, which leave wounds that it takes years to heal over. As to time, let the grower be guided by his own inclinations; 'tis better at any time of year than not to do it at all; still I am satisfied that the last of May or early in June is a good time to perform the operation. This, however, has a serious objection; it is the season when farmers are most busy, and can ill afford the time to attend to it.

Soon after the leaves of the blossoms have fallen, the fruit commences to form and set on the tree. One after another of the embryo fruit becomes crowded out and falls to the ground; this is continued from the time when the fruit first commences to grow till the last apple is plucked from the tree. A great deal of this imperfect fruit is fit for no purpose whatever, and lies and decays on the ground where it falls; later in the season the fruit grows larger, and is gathered up and fed to the cows or to hogs. Some benefit is claimed, even if the flow of milk is not increased; the cows seem to have such a love for apples that they will not content themselves to feed until they have visited each tree within their reach and secured every apple that the breeze may have caused to fall. Hogs are also passionately fond of apples, especially the sweet varieties, and have in some instances been fed for weeks on little else, and still have thriven well.

The ten varieties which have proved themselves to be entitled to the rank of best in Essex County are the Baldwin, Rhode Island Greening, Hunt Russet, Gravenstein, Red Astrachan, Hurlburt, Porter, Hubbardston Nonsuch, Danvers Winter Sweet, and William's Favorite. These ten varieties embrace those which have proved themselves the most prolific and constant bearers, and whose fruit is the most sought for by those who have to buy. There are, however, other kinds, which might be added, that rank high, and which we would scarcely be willing to omit; yet we are constrained

to say that for profit our belief is that a few varieties of those kinds which are most prolific and reliable, well cared for, would be of far more profit to the owner than an increased number of sorts.

A gentleman of my acquaintance who has given his attention to the cultivation of fruit for the last sixty years, tells me that he would sooner have less, than more than ten varieties, for any purpose either for pleasure or profit.

For table fruits, we should say the five best would be, William's Favorite, Gravenstein, Hubbardston Nonsuch, Baldwin, and Hunt Russet. I have named them in the order that they are ripe and ready for use. We would gladly add the name of the Hurlburt, Eustis, Drap d' Or, Sweet Baldwin, Ramsdale's Sweet, and Gilliflower, but of the hundreds of varieties to select from, we become bewildered, and are quite willing to leave it to each person to select such as suits his or her taste, well knowing that the most fastidious can be suited. All of the varieties I have named are abundant bearers, the Baldwin, Gravenstein, Hunt Russet, and Hubbardston Nonsuch, particularly so.

The Baldwin I have placed at the head of all the varieties. We are free to grant it the title of King of all the apples, for our soil and climate. While the other sorts some of them contest the title and vie with it for the honors of royalty, still the Baldwin wears the crown, for productiveness, long-keeping, general uses, and for market.

While all the apple-trees are alike in one sense, and have the same nature, the ash of the wood and foliage being identical, and scarcely differing in the most minute particular, still, like men and animals, each variety seems to have eccentricities and peculiarities of its own. Some, like the maple, lift high their erect and shapely branches. Others, like the oak, spread wide their limbs, and shade the soil for rods around. Others still, are crooked and gnarled, suggestive of sour and crabbed fruit. Some are sleek and smooth of limb, while others wear a rough and scaly coat, but boast of blossoms

fair, and luscious fruit. Some have pendulous branches, like the willow, and their fruit hangs swinging with every breeze, and joyfully seems to pass the time from summer to harvest. The fruit spurs of some are stiff and strong, and the fruit adheres closely to the branches and remains stationary till suddenly disturbed. All of these different habits or peculiarities are so marked and distinct, that the cultivator can easily determine by the tree just what kind of fruit it bears, and in his selection of trees in the nursery, can decide the different varieties by the color of foliage, and general habits of growth.

In the above treatise I have endeavored to answer your questions in as detailed a manner as I could possibly, and do it briefly. There is much that might be said and written in favor of the cultivation of the apple; there is no fruit that so largely enters into all the different uses to which we are in the habit of placing fruit. For culinary purposes the apple is far ahead of all fruits; for the table it is not surpassed; for preserves and drying, no other fruit is so universally used. In fact the apple is our constant friend; from July to July again we have it on our tables, and with us it is a joy forever.

Year after year we are greeted with the rich abundance of our orchards. When the trees of the Old Bay State fail to give us returns, we turn to the Empire State and the great West for a supply, and seldom look to them in vain. If the trees in one section of our country fail to produce an abundant crop, those of other sections fail not, and transportation from one place to another makes the supply universal, and distributes the luxury with a balance as just as the wants of demand and supply call for.

Of all the fruits by man possessed,
We deem the Apple much the best.
Year after year on crops depend,
The Apple proves a constant friend.
Both food and drink in it combined,
These, for the body and the mind,
Throughout our land, the East, the West,
Pronounce it first, pronounce it best.

STATEMENT OF T. C. THURLOW, OF WEST NEWBURY.

To answer your inquiries in brief,—we have now about eight hundred apple trees, and over twenty-five varieties. The soil is generally a good gravelly loam, with a sandy or gravelly subsoil. A very large proportion are Baldwins,—budded trees taken from our nursery, and planted in orchard rows in 1850 to 1855. The orchards were for several years cultivated,—two or three times planted with corn or potatoes,—but for the last sixteen or seventeen years have been down to *grass*, and for ten years or more pastured with *sheep*. The trees have not been enriched in any other way, except a small portion of the orchard, which has been partially cultivated, and two or three dressings of barn-yard manure ploughed in.

Occasionally we see a borer, which is or ought to be immediately dug out, or killed with a pointed wire. When our trees were young, they were washed every year, in June, with soft-soap and water, (half-and-half,) which killed all the borers' eggs, (if there were any,) and was otherwise beneficial to the trees. Of late years this has been neglected, hence the increase of the borer.

We have been troubled with canker worms since 1860. More than half our trees were entirely *ruined* by them within five or six years of their first appearance, and our apple crop reduced to merely nothing,—from eight hundred barrels a year before their appearance, to less than *a single barrel* of all kinds six or seven years afterwards,—and our trees reduced from four thousand in 1860 to eight hundred at the present time; although they were planted much too thickly at the commencement. After trying various remedies, we have decided that *printers' ink* (applied fall and spring) is the cheapest and most effectual. Our trees this year produced over nine hundred barrels of *good* merchantable apples. The tent caterpillar is at all times very troublesome, but can easily be taken off when small with the hand or a stiff conical

brush. No other insects to any extent trouble our apple-trees. The *field-mice* did considerable damage to our young trees during one or two winters, but care should be taken not to allow grass or other rubbish to accumulate around the trees, and thus afford them a shelter.

We try to prune our trees a *little* every winter; should prefer the mild weather during February and March. For young orchard or nursery trees, would trim in June. The wormy fruit that drops is generally disposed of by the sheep and other animals.

For the ten most *profitable* apples for this County, I would name the following, (the most valuable first): Baldwin, Hubbardston Nonsuch, Roxbury Russet, (for heavy land,) Hunt Russet, King of Tompkins County, R. I. Greening, Red Astrachan, Gravenstein, Porter, Danvers Winter Sweet.

For five best varieties for *table use*, I would suggest William's Favorite, Large Yellow Bough, Gravenstein, Hunt Russet, and King of Tompkins Co. They are all good bearers. There are probably many other excellent varieties that would do well in this County, but these are old and tried, and no one would go very far astray in planting these. Some of these will do well on a light soil with very little cultivation, while others require a rich soil and very high cultivation.

STATEMENT OF A GENTLEMAN OF GROVELAND.

I have perhaps fifty apple trees, consisting of Northern Spy, Hubbardston Nonsuch, Baldwin and Roxbury Russets, for winter use, and Gravenstein and Porter for the fall, growing on a variety of soil, with a subsoil of slate or gravel, with no especial pains to enrich, but growing upon the natural soil. My trees are most of them thirty or more years old; some of them, however, have been grafted within ten years, and upon these I have had the best crops.

While all around me the canker worm has been busy, I have as yet escaped, but until *this* year have had plenty of caterpillars, but consider them of but little account and easily managed when compared to the canker worm. I know of no way to get rid of the borer or the latter worm when once they favor you with a call.

Upon the question of pruning, I know there exists a variety of opinions. I always prune when I see the need, without regard to time of year, preferring to do so when the tree is bare; if done in the spring or summer, when the tree is full of sap, very much care must be used to prevent the bark from being injured.

You ask what disposition I make of the wormy fruit that drops. The most profitable use I can make of such apples is to sell them to some neighbor who appreciates early made cider.

Of the five best varieties, for this part of the County at least, I would name first the Gravenstein, then the Northern Spy, Baldwin, Roxbury and Hunt Russet. I am of the opinion that Northern Essex is the most favorable section to be found for the first named variety. I have visited many times the exhibitions of the Mass. Horticultural Society, and very many of the County exhibitions in various parts of the State, also the State fairs of New Hampshire and Maine, and have never seen so good specimens as are here grown. My trees of this variety are upon grafts say from six to ten years old, put into vigorous trees, which bore profusely this year bushels of apples that would measure twelve inches in circumference each.

The Northern Spy, for a late apple, is my favorite. I had been fearful this variety would be a failure with us, and some parties had begun to graft them over on account of their slowness in coming into bearing, and the fruit rotting on the trees, their ill shape, their lateness in putting out in the spring; but this year they have redeemed themselves, and

take the first rank, have all produced heavy crops of choice apples, and at this date outsell any other variety by fifty cents to a dollar a barrel.

I have written this much in haste; regret not having more time. You can make what use of it you desire, only I would ask you to withhold the name of the author, if any part should go into the report.

STATEMENT OF R. C. WARE, FOR B. P. WARE, OF MARBLEHEAD.

My father (B. P. Ware) being away for a couple of weeks, I will answer your questions concerning apples, as I am pretty familiar with those my father raises.

Have three hundred and thirty trees, of twenty-six different kinds. Soil loam, with gravelly subsoil and clay below the gravel. Trees manured with compost in the spring. They are treated very much like other crops. Trees are from fifteen to fifty years old. The young orchard was started by setting the young trees twenty feet apart; the trees were budded when two years old. The orchard has been cultivated ever since the trees were set out, and the trees severely pruned, with the hope of keeping them small and of bringing them into early bearing. The trees, however, wouldn't be kept small, and are now so thick that nearly every other tree will have to be removed this year.

Very little trouble from borers. They are sometimes hunted with a pliable stick or wire. Caterpillars are kept down by picking off the young nests. Canker worms are kept off by tarred paper and printer's ink, applied fall and spring; otherwise the leaves would be all eaten off the trees by these worms. The trees are pruned nearly every April. No special care is taken of wormy fruit that drops.

Baldwin, Pickman Pippin, Drap d'Or, Roxbury Russet, Danvers Winter Sweet, Sweet Baldwin, Greening, Early

Williams, Gravenstein, Porter, Shepard's Sweeting, Kilham Hill, Peck's Pleasant, Phillips' Pippin, and Lyscom, are all good varieties; but Drap d'Or, Pickman Pippin, Baldwin, Early Williams, Roxbury Russet, and Sweet Baldwin, are the most profitable to raise for market.

For table, Early Williams, Porter, Gravenstein, Drap d'Or, Lyscom, Kilham Hill, Baldwin, and Roxbury Russet, give a constant and excellent supply from August 15 to June 1st. The Drap d'Or is a very abundant bearer, the others quite good. The Lyscom and Kilham Hill are of little value, except for table, and are not profitable for market. The Pickman Pippin is considered the best cooking apple in the market, by those who know it. It is very tart, high flavored, fine grained, and of good size; it keeps until February. The trees come into bearing late, but bear pretty well after they begin. The Drap d'Or is a very large fall apple, tart, but excellent for eating as well as cooking. It keeps well until the middle of November. Trees come into bearing young, and bear very heavily. As the trees grow older, the apples do not grow quite so large.

I will add the following remarks as the result of my observation: Trees not in an orchard seldom bear. Trees that do not bear good apples are worse than useless. There are only a few varieties that pay. It is better to raise only those varieties that do pay. Where there are only a few trees of a kind, there are not enough of that kind of apples raised to pay for marketing, consequently they are often wasted. An apple that is unknown in the market is hard to sell. Neglected trees are of no use.

STATEMENT OF SAMUEL NEWMAN, OF PEABODY.

[Manuscript Lost.]

Mr. Newman speaks of the apples, called the Sutton by the committee, as having been raised on a graft from the original tree grown in Salem, which produces even larger apples

than were shown at Danvers. They keep until November, and are, as he says, "most excellent for sauce." Your committee know how nice they were for eating. The tree is a thrifty grower and good bearer. The tree, he thinks, was bought from a New York nursery, for "twenty ounce" apple, some years ago. Any one interested, will find Mr. Newman ready to give information on the subject.

D. W. Low, *Chairman.*

STATEMENT OF J. B. MARSTON, OF DANVERS.

With regard to the culture of apples, I would say that I have in my garden a few apple trees of about fifteen years' growth. I have but four different kinds. The soil is well fertilized. The subsoil is loam. With regard to the treatment of young trees, I believe in thorough tilling of the soil, keeping the ground light about the roots, and free from weeds. To fertilize the soil, I use a compost of animal manure and decayed vegetation, together with a liberal share of superphosphate of lime and wood ashes. This is applied to the land in planting time, in the hills and rows, with a portion around the trees, dug in with a fork. My plan of preparing the manure is to fork over the compost heap, in early spring, adding by degrees the superphosphate and ashes, until the whole is well mixed. Then leaving it awhile to permeate and heat through, it becomes in good condition for use.

It is of the first importance, in my opinion, in the cultivation of apple trees, to take care of the roots. It is well to look after and destroy the insects; but if the roots are neglected, I think that we shall find worms more plenty than fruit. I don't believe in the way that some have of tearing up the roots with a plough. It is better, I think, to keep the ground light by digging around the trees with a fork.

As for the insects, I am not much troubled with borers of any kind; when I find any in my apple trees, I choke them with hard soap. The caterpillars are exorcised on the point

of a long pole, and the canker worms are treated to a coat of tar. My trees are pruned (but not excessively) in the month of May; the cuts on the larger branches I cover with paint. My wormy fruit I bury deep in the ground away from the trees. With regard to the choice of apples, I think that must depend principally on the taste and fancy peculiar to each individual, and among the great variety of apples produced, it seems as though every one ought to be gratified. It is well, perhaps, that personal tastes and fancies differ, as otherwise some things now considered very choice would be entirely neglected.

STATEMENT OF H. ALLEY, OF WENHAM.

I am not a great fruit grower, but I am interested in such things, and am watching the markets as to prices, quantity, and quality of the different kinds of fruit, and on this account, in making a reply to your questions in regard to apples, I will say that I have twenty apple trees—seven Baldwins, two Gravensteins, two Porters, two Hubbardston, two Danvers Sweet, two Red Astrachans, two Northern Spy, and one other, a worthless kind. For profit, and all things considered, I would select the following five varieties: Red Astrachan, Gravenstein, Hubbardston, Baldwins, and Porters. All the above kinds do well in this part of the county. Have been troubled with canker worms, but by the use of tar paper and printer's ink, they were nearly exterminated.

I prune all my trees during the winter from the middle of January to the first of March. Had two Porter trees that never gave me over one barrel each until I pruned them, then they gave me three barrels each, of as fine fruit as ever grew in the county.

The windfalls and wormy apples are sent to the cider mill. We always found a ready sale for our Red Astrachans and Gravensteins, and at prices treble those of other varieties,

and that was so this year, notwithstanding the large crop of apples of all kinds.

To make up the ten best varieties, we would add the following to those above named: Williams, R. I. Greenings, Hunt Russet, Roxbury Russet, and Danvers Sweet.

The Williams Apple is but little known in this county, but in the vicinity of Boston they are grown in considerable quantities, and command high prices. In 1875 they were sold for $5 per bushel. I intend to change my Northern Spy trees and some others to the Williams. What little dressing we use is barnyard manure. The abovenamed varieties are all great bearers.

STATEMENT OF JAMES FLINT, OF MIDDLETON.

I have about five hundred apple-trees; about one hundred are old ones, that were on the place when I took it; the rest I have set myself. I have over forty different kinds, which are more kinds than I wish I had. I do not think it a good plan to have so many varieties. I have in my orchard loam and gravelly subsoil, enriched with barnyard manure in the spring of the year. I commenced by setting some over a hundred, about thirty-two years ago, and have set some occasionally since, until within ten or fifteen years. I ploughed the land deep before setting, by going twice in the same furrow, and digging the holes large; and keeping the ground cultivated, and washing occasionally, when small, with potash water.

I am troubled some with the borer, not with the canker worm or caterpillar, or much with any other worm. The winters have hurt my trees more than anything else. Take the borer in season with a knife and wire, and you can soon fix him. I trim my trees late in the fall or early winter, cutting off the dead wood and limbs that cross each other. I have found by sad experience that it is injurious to trim after the sap begins to flow. The last of June may be as good a

time, but we are apt to be more busy, and in fields that are in grass it is not so convenient. The wormy fruit I sell or make into cider.

What ten or more varieties of apples to cultivate in this County?—1, the Red Astrachan,—an early variety, a good bearer, and good for market; 2, William's Favorite,—a very showy apple, a good bearer, and finds ready market; 3, Gravenstein,—a very superior apple, but not a great bearer, or very saleable fruit; 4, Porter,—profitable for cultivation, and a good bearer; 5, Hubbardston,—a very superior apple, a great bearer, and in eating just before the Baldwin, one of the best; 6, Hurlburt,—a very good apple, and worthy of extensive cultivation, resembling the Gravenstein; 7,—Danvers Sweet,—a very good sweet apple, though it water-cores in some soils; 8, Sudbury Sweet,—a very superior apple for baking, or boiled in molasses water, after paring and taking out the cores; I always found a ready market for it; 9, Edwards' Russet,—a very good apple, large size, and a great bearer; it bears every year with me; 10, Baldwin,—a very good apple, and will recommend itself, though I think it affected by cold winters more than almost any other variety; 11, Ramsdell Sweet,—a very showy apple, resembling the William's Favorite; a very great bearer, good eating, and good for market; 12, Rhode Island Greening,—a very saleable fruit; I think it requires a very strong soil; it does not bear as well with me as I should like; 13, Fall Harvey,—a good apple for cooking or table, and of excellent flavor where the soil suits it; I find a great difference in that respect; 14, Ladies' Sweet,—a very good apple, and valuable for its late keeping; a great bearer.

The five or more varieties which are best for the table, are, William's Favorite, Porter, Gravenstein, Hubbardston, Hurlburt, and Baldwin. I find that to raise good apples they must be well taken care of, and the better they are cultivated the better apples you will get; and I have learned by my own experience, and that of my neighbors, not to sow small

grains among them, and allow them to ripen among them. It is very injurious, especially when they are young, rye in particular. I had an orchard that I wanted to lay down to grass, and I sowed oats, calculating to cut green for fodder. It so happened that I did not cut them until ripe; the trees were not very large; the bark on the south side was sun-scalded, so that it killed a good many, and the rest were not good for much.

As to grafting, I have had considerable experience, both for myself and others, and I find that sour apple grafts put into sweet stocks, are not apt to do so well as those of a sweet or a milder flavor. I think it best to only take those limbs you want to graft, so as to make a well-balanced head, and leave the rest on the tree till another year. I think it best not to take off too much at once.

STATEMENT OF JOHN H. SEARS, OF DANVERS.

I have two hundred and fifty apple-trees under cultivation, and fifty more (most of which are grafted) in pasture land, (fifteen varieties.) Our soil is from six to fifteen inches dark loam, underlaid by yellow loam of from one to four feet in depth. The next lower deposit is a very hard loamy gravel. This soil may be considered as the general form of that of North Danvers. Young trees, in my experience, should be kept under cultivation for twelve or fifteen years, for the plough will keep the surface roots thinned out, and those directed down in the subsoil, which are its principal source of nourishment during our seasons of drought, grow deeper and stronger, giving a firmer support to resist the power of the high winds, which will, if the roots are more on the surface, so rock the tree as to displace the roots, and, as is often the case, overturn it. For old trees, once in five years is often enough to turn the sod over, and if it is well cultivated the first year in corn, the second to potatoes, the

third to Hungarian and grass seed, which crops can in most orchards be successfully cultivated, it will be in good condition as far as the roots are concerned, to reward the owner with good crops.

Our trees are nearly all in bearing. One orchard of one hundred trees, which, when planted, in May, 1858, were one inch in diameter, New York trees, are now some of them eight inches in diameter. The soil is rich loam, but very shallow, the ledges often coming to the surface. Borers, caterpillars, and canker worms destroy the beauty of most orchards in this neighborhood. I dig out the borers with a sharp knife, or probe for them with a piece of small-sized wire, partly hooked at the end, whenever I see any signs of them. Caterpillars are quickest destroyed by gathering their eggs after the leaves have fallen; as they are usually on the ends of the branches they are easily detected, and after I gather them I burn them up.

The canker-worm is the worst pest to deal with. She must be kept down from the trees, for she will deposit her eggs under the loose scales of bark, either on the body or limbs of the tree, and so many of them that it is impossible to destroy them. I have tried several methods to keep the grubs from going up, and I think that a strip of tarred paper tacked around the body of the tree, and the preparation called printers' ink thinned with petroleum put on with a brush, if attended to, will destroy as many grubs, and with less damage to the tree, than any other mode.

In pruning trees I take off a limb at any season of the year when I see a chance to improve the shape of the tree, or when one limb interferes with another. If trees have not been pruned gradually as they have grown, and want much wood removed at once, I usually take the month of March, as the dry winds at that time will dry the cut wood, causing it to shrink, and affording a good chance to heal over. Our wormy windfalls we grind and turn to vinegar, or throw them to the hogs.

I consider Tompkins County King, Baldwin, R. I. Greening, Hubbardston Nonsuch, Roxbury Russet, Danvers Sweet, Tolman's Sweet, Gravenstein, Red Astrachan, William's Favorite, and the Gilliflower,—eleven excellent varieties, both as good bearers and fine fruit. As a late winter apple, Tompkins County King stands in advance for the table; as a late fall, Hubbardston Nonsuch and Tolman's Sweet; as an early fall, William's Favorite or Gravenstein; and for an early apple, Gilliflower or Red Astrachan. The Gravenstein in this section, when grafted on a young stock, is apt to be a short-lived tree, and on the other hand, when grafted on limbs of large trees, it continues healthy many years. The Blue Pearmain, though a fine-flavored apple, soon commences to decay.

PEACHES, GRAPES AND ASSORTED FRUIT.

The Committee report as follows;—

PEACHES.

For best nine specimens of Whiteflesh, Solomon Fuller, Danvers, $2; best nine specimens of Yellowflesh, E. F. Webster, Haverhill, $2; best nine specimens Essex Co. Seedling, Josiah Newhall, Lynnfield, $2.

Gratuities of $1.50 each were awarded to J. Moore, Peabody, and J. S. Ives, Salem, for "Ives's Blood."

GRAPES.

Premiums of $3 each were awarded to Rufus Goodwin, Haverhill, for Best Concord and Hartford; A. J. Hubbard, Peabody, Isabella; James Lowrie, Danvers, Delaware and Iona; Geo. W. Gage, Methuen, Creveling; L. K. Pemberton, Groveland, Clinton; Franklin Upton, Danvers, Allen's Hybrid; James Lowrie, Danvers, Diana; E. P. Richardson, Lawrence, Adirondac; F. Upton, Danvers, Israella and Eu-

melan; Geo. W. Gage, Methuen, Rogers, No. 3; J. W. Ropes, Danvers, Rogers No. 4; E. P. Richardson, Lawrence, Rogers No. 15; Geo. W. Taylor, Peabody, Rogers No. 19; F. Upton, Danvers, the Salem.

For best collection of Cold House Grapes, W. H. Brown, Peabody, $6; second best collection, R. D. Rogers, Peabody, $4; third best collection, Aaron Low, Essex, $3.

Best collection ten varieties of Grapes, J. W. Ropes, Danvers, $7.

For best Basket of Assorted Fruit, Peter Wait, Danvers, 4; second best, Aaron Low, Essex, $3.

For the best specimens of other varieties deemed worthy by the Committee, Geo. W. Gage, Methuen, for Worden Seedling and Cottage, $1.50 each; D. H. Stickney, Groveland, Seedling, $1.50; F. Upton, Danvers, Croton, $1.50.

Gratuities of $2 each were awarded to Geo. W. Taylor, Peabody, Grapes; J. Q. A. Batchelder, Danvers.

Gratuity of $1.50 was awarded to B. S. Perkins, Danvers, Grapes.

Gratuities of $1 each were awarded to H. B. Learnard, Danvers, Plums; Peter Wait, Danvers, Quinces; T. K. Leach, Topsfield, Grapes; Edwin Verry, Salem; Solomon Fuller, J. Silvester, and Peter Wait, Danvers; Franklin Stiles, Middleton; David W. Low, Gloucester, Basket Wild Fruit.

Gratuities of .50 were awarded to Benj. Russell and J. W. Ropes, Danvers, Quinces; Wm. Huff, Newburyport, Grapes; Chas. E. Smith, Danversport, Grapes; Henry Fowler, N. Cross, J. L. Smart, and Albert Berry, Danvers; J. Stimpson, Gloucester; Thos. Capers, Newburyport.

T. C. Thurlow, James Marsh,—*Committee.*

FLOWERS.

The following premiums and gratuities are awarded :—

Mrs. L. P. Weston, Danvers, best pair Parlor Bouquets, $3 ; Mrs. J. Henry Hill, Amesbury, best pair Hand Bouquets, $2 ; Mrs. L. P. Weston, Danvers, best Floral Design, $2 ; Thomas Capers, Newburyport, best dish Cut Flowers, $2 ; John Mitchell, Beverly, best twelve Dahlias, Miss S. P. Towne, Middleton, best twelve Petunias, J. Mitchell, Beverly, best twelve Pansies. Miss S. P. Towne, Middleton, best twelve Phlox, Mrs. Mary C. Tapley, Danvers, best twelve Verbenas, each $1 ; Mrs. C. N. Horner, Georgetown, Native Flowers, first premium, $2 ; Mrs. M. E. Fuller, Middleton, Native Flowers, second premium, $1 ; J. J. H. Gregory, Marblehead, best general display, first premium, $4 ; Mrs. J. Henry Hill, Amesbury, general display, second premium, $1 ; J. J. H. Gregory, Marblehead, best Basket Flowers, $1 ; Francis Putnam, Salem, Gladiolus, first premium, $3 ; Mrs. J. Henry Hill, Amesbury, Gladiolus, second premium, $1.50 ; T. Capers, Newburyport, Parlor Bouquet, second premium, $1.

Gratuities of fifty cents each were awarded to,—Mrs. W. L. Weston, Danvers, Orange Tree ; Mrs. Augustus Putnam, Danvers, Japonica ; A. S. Page, Danvers, Wild Flowers ; Mrs. M. E. Fuller, Middleton, Winter Bouquets ; Mrs. R. Hart, Danvers, Flowers ; Mrs. Wm. L. Weston, Danvers, Coleci ; John Webster, Bouquet ; Mrs. Melinda Webster, Bouquet ; Miss E. Webster, Bouquet ; Mrs. J. Q. A. Batchelder, Danvers, Amarillis ; Mrs. E. M. Low, Gloucester, Lilies and Asters ; Mrs. Mary Hawkes, Asters ; Miss N. M. Putnam, Wild Flowers ; Mrs. D. W. Doherty, Danvers, Cactus ; Mrs. A. Baker, Danvers, Cactus ; Ruth P. Fowle, Danvers, Bouquet ; Mrs. J. Southwick, Danvers, Flowers ; Bertie Allen, Danvers, Sunflower ; Wallace Legro, Danvers, Bouquet ; Horace Walton, Danvers, Flowers ; Miss Bertha F.

Perkins, Danvers, Bouquet; Mrs. Louisa P. Hood, Danvers, Bouquet; Elizabeth P. Peabody, Bouquet; Hannah P. Cross, Danvers, Flowers; Geo. Mayhew, Danvers, Basket Flowers; Mrs. H. A. Wiggin, Danvers, Abutilon; Mrs. C. H. Perry, Danvers, Flowers; Carrie P. Perry, Danvers, Wild Flowers; Serena P. Towne, Middleton, Pansies, Verbenas, and Bouquets; Sarah E. Marston, Danvers, Cut Flowers; Elbridge Trask, Danvers, Fig Tree; Frank Lord, Danvers, Bouquet; Mrs. D. W. Low, Gloucester, Flowers; Mrs. S. E. Jones, Bouquet; David Mighill, Georgetown, Bouquet; Mrs. D. R. Parker, Groveland, Verbenas; Andrew Nichols, Danvers, Century Plant; Mrs. M. E. Goodwin, Lynn, Acacia; Mrs. D. R. Parker, Groveland, Petunia; Mrs. J. H. Hill, Amesbury, Petunia; Mrs. J. A. Hoyt, Georgetown, Pansies; Fred. W. Ladd, Groveland, Flowers, ; Mrs. A. R. Rundlett, Danvers, Bouquet; Miss E. F. Hill, Peabody, Dahlia; Lillie Brown, Pinks; Addie Hood, Pansies; Belle Waldron, Salem, Nasturtiums; Mrs. E. T. Waldron, Danvers, Wild Flowers; John Mitchell, Beverly, Geraniums; Mrs. B. McLoud, Bouquet; Mrs. S. B. Edwards, Beverly, Bouquet; E. P. Ropes, Danvers, Phlox; M. Waite, Danvers, Verbenas; John Sears, Danvers, Wild Flowers; Sarah Ewell, Danvers, Bouquet; Mrs. Legro, Danvers, Wreath; Sarah A. Cross, Danvers, Bouquet; Sarah E. Fuller, Danvers, Bouquet; Mrs. Wm. B. Tyler, Bouquet; C. F. Newhall, Verbenas; Hannah Whipple, Bouquet; Emma Tufts, Danvers, Flowers; M. Waite, Danvers, Dahlias; Miss A. Felton, Danvers, Verbenas; Anna Dodge, Peabody, Bouquet; Mrs. Hull, Peabody, Amarillis; Mrs. A. R. Gage, Boxford, Flowers; Mrs. D. J. Preston, Danvers, Flowers.

The Committee were happy to be greeted with such a brilliant display of plants and flowers, though the large number of entries, and so many of nearly equal merit, made the task of awarding the premiums, from the sums of money at their disposal, a difficult one.

So numerous were the contributions, it was deemed advisable to make a departure from the old routine by establishing *Second Premiums*, in several instances where justice to the contributors demanded it. In the case of Parlor Bouquets, where there was but little difference in the merits of two very beautiful contributions, it seemed to be the only way in which to give a fair expression of the opinion of the Committee.

Two years ago we called for contributions of Gladiolus, and requested the Society to offer premiums for them, believing the increasing interest in the cultivation of this beautiful bulb warranted such a proceeding. The *call* has been lavishly responded to,—as witness the twenty vases of excellent varieties exhibited by Mr. Francis Putnam, of Salem, and half as many more by Mrs. J. Henry Hill, of Amesbury,—but *not so* the request for authority to award a premium. What were the Committee to do? pass these magnificent displays by unheeded, or assume the responsibility of establishing the premiums themselves? They chose the latter alternative, trusting their course will be approved and sustained by the officers of the Society.

Again we wish to call attention to the fact, that one dollar is the largest sum ever offered for the best collection of native flowers. I wish every gentleman having this matter in charge, would, next September, collect and arrange as we have done, two hundred and twelve varieties of native plants, flowers, ferns and mosses, climbing steep ridges for the delicate Harebell, wading in brooks for the showy Cardinal Flower, sinking in bogs and swamps, searching for Pitcher Plants and Fringed Gentian, wrestling half an hour with resolute Thistles that refuse to be gathered; slipping on treacherous banks, gathering the prettiest Ferns, and brightest Dragon-root; walking miles for the fair field flowers, almost endless in variety; riding farther still for those specimens that grow only on the salt marshes of our eastern boundary;—and then I

am confident the Flower Committee would never again be compelled to beg for better premiums for these wayside blossoms.

No one but a true lover of nature would ever attempt to present a complete collection of native plants; but even if one derives compensation in the pleasure of gathering, and studying these wild beauties, there is still a satisfaction in feeling that one's work is appreciated by the Society in whose interests they labor; so once more we ask you to establish good *fair* premiums for Native Flowers. In the present instance, where one had collected one hundred varieties, and another presented seventy-five, the arrangement of which deserved especial notice, we feel sure that our venture in giving first and second premiums will be fully sustained by the officers of the Society.

The frequent demands made upon the Committee for vases, by people bringing contributions from a distance, compel us to suggest the propriety of the Society's purchasing a supply of vases, dishes, and other receptacles for flowers, for the convenience of people who favor us with large displays. A member of the Committee suggests vases, similar to those exhibited by the Beverly Pottery Company, and small bottles for Dahlias, Verbenas, &c., as being serviceable and not expensive.

The giving of so many gratuities we believe to result beneficially both to society and contributors. The floral display in itself being sufficiently attractive to draw a large number of visitors to the exhibition hall, were there no other attraction, we should not fail to offer good inducements to the florists to bring hither their treasures. The gratuities as well as the larger premiums will no doubt encourage those who cultivate the flowers, and so each year our towns and villages will grow in beauty, as the growing taste for the beautiful is developed, and prompts our people to reclaim many neglected spots and transform them into bowers of loveliness. Who

cannot feel the refining influence of flowers, and in caring for and studying them, how can one help being led through Nature up to Nature's God!

"In these we find where Wisdom hides,
And modest Beauty cowers,
And where Omnipotence resides,
And Tenderness,—in flowers."

Committee—James F. West, Mrs. N. E. Ladd, Mrs. D. W. Low, Susan Putnam, Mrs. L. L. Abbott, Clara A. Hale, Ella E. Abbott.

VEGETABLES.

Your Committee met promptly in the tent immediately after the meeting of the Society had dissolved. Messrs. Henry A. King, Peabody, Joseph Buzzell, Methuen, and the Chairman, were present first, but were soon joined by Messrs. Ansel W. Putnam, Danvers, and Asa T. Potter, Ipswich.

After some discussion as to the meaning of the paragraph which accompanies the list of premiums, and which reads, "No competitor for premiums to exhibit either more or less number of specimens of any vegetable than the premiums are offered for," its meaning was clearly understood. It seemed to be more the province of the Superintendent to enforce this rule, than of your Committee.

A number of competitors had displayed more specimens than are required, while others had shown too few. In the former case the competitors would have made an equally worthy show had they selected the requisite number of the best specimens, and they would thus have prevented all chance of overcrowding the tent, and enabled the visitors to go away better instructed, and without having been deceived by inferior specimens. To cite an example of the latter case, a sample of less than twenty-five ears of field corn appeared

most favorably to your Committee, but they could give it no premium, and could only give it a gratuity.

The Committee believe the rule excellent, and, that it may be strictly adhered to, I would recommend that the Superintendent of Vegetables be instructed to see that only as many vegetables are placed on exhibition as will conform to the rule of the Society above quoted.

Some exhibitors did not follow the rules of the Society as to size and weight of vegetables, but premiums were in no case awarded contrary to your rules in this respect. It was our endeavor to award premiums to vegetables that were best suited to the purposes for which they are used, due regard being paid to the cost of cultivation.

The present manner of arranging the vegetables entered for premiums, can be greatly improved upon by adopting the plan which the Massachusetts Horticultural Society followed this year for the first time, and which has been generally pronounced most desirable by connoisseurs. That Society no longer exhibits by collections, but by specimens, so as to have all Mangolds together, all Flat Turnips together, etc., etc. Thus the Committees can do their work most justly and much more quickly. All specimens should be distinctly numbered with the exhibitor's number as contained in the list of entries; and no vegetable should have the owner's name attached until after all awards have been made.

The Committees, having the list of premiums, as contained in the printed "Order of Arrangements," and a sufficient number of premium and gratuity cards, then begin their work. They see before them, in examining for example, the Mangolds, all that have been entered, without having to wander all about the tent to find them; and they can at once examine and place the premium card where it belongs, at the same time making a note of the number attached to the specimen for future guidance. So on till all the awards have been made.

The owners' names have not yet been known by the Committees, so that no one can have the chance of saying that any partiality has been shown. It is now the time when the superintendent of the hall should be instructed to give the chairman of the committee the book which contains a list of exhibitors, with their numbers prefixed to their names, and a complete list of the articles each exhibits following his name. Then let the Chairman write on each premium card the exhibitor's name and the name of specimen for which the award was made.

It would be well to provide cards twelve inches long by three and a half inches wide, on each side of which should be printed the names of every vegetable for which premiums are offered; these to be placed in a slit, made in the end of a round stick one-half an inch thick, and the whole supported on a round base one inch thick and five or six inches in diameter. If these are placed near what they represent, and the card at right angles to the length of the tables, we shall have given to our visitors the means of ascertaining at a glance, up or down the tables, where everything is. This plan would also be especially good, if used in the display of fruit, which is always fine at our shows, and would be the means, among both vegetables and fruit, of acquiring for our exhibitors even more credit than they can possibly derive at present. These opinions are most respectfully submitted by the Chairman of this Committee, and are based, not only upon his experience and observation in serving at our last show with a number of gentlemen most admirably qualified for the place, but also from what he has seen at many other shows in this country and in Europe.

The Massachusetts Horticultural Society had not concluded to fully adopt this plan until this centennial year; why cannot we begin the new century by adopting it before our next show?

For the Committee,

FRANCIS H. APPLETON, *Chairman.*

Premiums were awarded to the following persons :—

Beets—Early Turnip Blood, Thos. E. Green, Danvers, $3 ; Long Smooth Dark Blood, J. J. H. Gregory, Marblehead, $3.

Carrots—Best Short Top Long Orange, Samuel G. Goodhue, Hamilton, $3 ; Short Horn Orange, Nathan Bushby, Peabody, $3.

Mangold Wurtzels—best six specimens, Benj. P. Ware, Danvers, $3.

Flat Turnips—Best Purple Top, H. A. Stiles, Middleton, $3.

Ruta Bagas—twelve specimens best Yellow, N. P. Proctor, Danvers, $3 ; White Sweet German, J. J. H. Gregory, Marblehead, $3.

Parsnips—Sweet German, N. P. Proctor, Danvers, $3.

Onions—One peck Best Danvers, Austin C. Peabody, Middleton, $3 ; Yellow Flat, J. J. H. Gregory, Marblehead, $3 ; Red, L. C. Hanson, Peabody, $3.

Potatoes—one peck best Early Rose, Allen Lee, Manchester, $3 ; one peck No. 6, or Peerless, J. J. H. Gregory, Marblehead, $3.

Cabbages—three specimens Best Savoy, H. Perry, Danvers, $3 ; next best Savoy, L. C. Hanson, Peabody, $2 ; best Fottler's Drumhead, James Looney, Marblehead, $3 ; next best Fottler's Drumhead, C. H. Brown, Danvers, $2 ; best Stone Mason, J. P. Goodale, Peabody, $3 ; best Early Brunswick, Henry Bushby, Peabody, $3 ; next best Early Brunswick, M. F. Batchelder, $2 ;Best Red, M. F. Batchelder, $3 ; next Best Red, H. Perry, Danvers, $2.

Cauliflowers—Three specimens best, M. F. Batchelder, Peabody, $3 ; next best, E. G. Hyde, Danvers, $2.

Celery—Four roots best, M. F. Batchelder, Peabody, $2.

Field Corn—Twenty-five ears best, C. K. Ordway, West Newbury, $3.

Sweet Corn—Twelve ears in milk, Best Early, Thomas E. Green, Danvers, $3 ; do. Best Late, John Lynch, Danvers, $3.

Squashes—Three specimens, Best Marrow, M. F. Batchel-

der, Peabody, $3; American Turban, James P. King, Danvers, $3; Hubbard, Charles O. Putnam, Danvers, $3; Marblehead, J. J. H. Gregory, Marblehead, $3.

Melons—Three specimens Best Green Flesh, L. C. Hanson, Peabody, $2; Best Musk, M. F. Batchelder, Peabody, $2; two specimens Best Watermelons, Dayton Killam, (sixteen years,) Boxford, $2.

Tomatoes—Twelve specimens best round flat, Gen. Grant, and twelve specimens Spherical, J. J. H. Gregory, Marblehead, $3; Essex Smooth, Aaron Low, Essex, $3; Paragon, dish of any other variety, J. J. H. Gregory, Marblehead, $3; do. for greatest variety, $3.

Cranberries—One peck best Cultivated, Jos. S. Holt, Danvers, $3; one peck next best, N. K. Cole, Boxford, $2; one peck next best, H. A. Stiles, Middleton, $1.

Collection Field and Garden Seeds—First premium $8, to John S. Ives, Salem; second premium to J. J. H. Gregory, Marblehead, $5.

Gratuities were awarded to Aaron Low, Essex, Garden Seed; Elias Grimes, Mammoth Squashes, (115 and 140 lbs;) E. M. Mansfield, Danvers, 52 Squashes; J. J. H. Gregory, Marblehead, Collection Squashes,—each $2. Geo. H. Winchester, Peabody, Early Essex Potato; J. P. Goodale, Peabody, Field Corn; Nathan Page, Danversport, White Field Corn; Charles O. Putnam, Danvers, Marblehead Squash; A. P. Blake, Peabody, collection of vegetables; F. P. Putnam, Turnips and Parsnips; T. Graham, Danvers, collection; F. W. Lyford, Danvers, Carrots; Nathan Bushby, Crookneck Squashes; F. S. Lovett, Beverly, Pumpkins; H. Perry, Danvers, Squash Peppers; L. C. Hanson, Peabody, Sage, Marjoram, and Savory; M. F. Batchelder, Peabody, Sage and Marjoram; E. S. Flint, Danvers, Russian Cucumbers,—each $1. M. F. Batchelder, Peabody, Celery; Gustavus Brown, Georgetown, Big Squash, (90 lbs.)

COUNTERPANES, CARPETINGS, AND RUGS.

The Committee appointed to examine Counterpanes, Rugs, and Carpets, have attended to their duty, and would report:

The entries of these articles, (except carpets,) were large, numbering 115, and were arranged in the hall more as a decoration to it than for the convenience of the Committee to examine. It was with great difficulty that we examined the Rugs—very far from being satisfactory to ourselves, and probably less so to those who placed them on exhibition. We did the best we could under the circumstances, and have awarded premiums and gratuities as follows:—

COUNTERPANES.

First premium awarded to Mrs. J. C. P. Legro, of Danvers; second premium to Mrs. Mary P. Morse, of Boxford.

Gratuities—No. 1, Mrs. E. Tucker, Peabody, $1.00; No. 6, Miss Mary Very, Salem, 50 cents; No. 28, Mrs. Susan Hynd, Danvers, 50 cents; No. 30, Miss Augusta Arvedson, West Peabody, 50 cents; No. 41, Mrs. E. M. Low, Danvers, 50 cents; No. 43, Mrs. E. Hunt, Salem, 50 cents; No. 58, Mrs. Abby Green, Salisbury, 50 cents; No. 73, Mrs. Jane Hill, Beverly, 50 cents; No. 67, Mrs. J. C. Andrews, Manchester, $1.00; No. 75, Miss Susie Bartlett, Newburyport, 50 cents; No. 84, Mrs. Mary Johnson, Danvers, 75 cents; No. 93, Mrs. P. W. Kimball, Beverly, 50 cents; No. 96, Miss Anna P. Clark, Topsfield, 50 cents; No. 99, Mrs. J. R. Peabody, Topsfield, 50 cents; No. 110, Mrs. H. M. Bean, Rowley, 75 cents; No. 115, Mrs. A. L. Ames, Peabody, 50 cents.

RUGS.

First premium, No. 77, Mrs. Cyrus K. Ordway, West Newbury; second premium, No. 61, Mrs. Elnathan Dodge, Danvers.

Gratuities—No. 2, Miss Elizabeth Wilson, Beverly, $1.00; No. 10, Mrs. R. E. M. Richardson, Danvers, 50 cents; No.

16, Mrs. Wm. H. Price, Lynn, 50 cents; No. 18, Mrs. Sarah J. Locke, Danvers, 50 cents; No. 19, Mrs. Moses Welch, Danvers, 50 cents; No. 22, Mrs. A. H. Tibbets, Danvers, 50 cents; No. 29, Mrs. Thomas Trask, Danvers, 50 cents; No. 42, Mrs. Judson W. Dodge, Danvers, 50 cents; No. 44, Mrs. John A. Gibney, Salem, 50 cents; No. 45, Mrs. John Hind, Danvers, 50 cents; No. 49, Mrs. L. B. Taylor, Danvers, 50 cents; No. 52, Mrs. Maria Ledingham, Danvers, 50 cents; No. 47, Mrs. Grace Scampton, Danvers, 50 cents; No. 51, Master William Robinson, Danversport, 50 cents; No. 64, Mrs. George B. Viles, West Peabody, $1.00; No. 68, Mrs. James M. Perry, Danvers, 50 cents; No. 74, Mrs. Thomas W. Putnam, Danvers, $1.00; No. 79, Mrs. Mary H. Colman, Newburyport, 50 cents; No. 86, Miss Lillie Clark, Salem, 50 cents; No. 80, Mrs. Joseph B. Glazier, Salem, $1.00; No. 87, Miss Alice Edmonds, Salem, 50 cents; No. 91, Mrs. Lydia A. Fuller, Lawrence, 50 cents; No. 100, Miss S. B. Peabody, Topsfield, 50 cents; No. 101, Mrs. Simeon Beckford, Gloucester, $1.00; No. 103, Mrs. L. K. Pemberton, Groveland, 50 cents; No. 105, Miss Abbie J. Bazin, Danvers, 50 cents; No. 108, Mrs. Abel Procter, Peabody, 50 cents; No. 112, Miss Stickney, Georgetown, 50 cents.

S. W. Hopkinson, Mary G. Lambert, Clara A. Hale—*Committee.*

LEATHER.

To Henry Hobbs, of Wenham, for Harness, gratuity, $10.

To Joseph Merrill, of Danvers, on Hair Calfskin, gratuity, $3.00.

To John E. Todd, of Rowley, on Thick Boots, gratuity, $3.

To John I. Ladd, of Groveland, on Ladies' Shoes, gratuity, $2.00.

D. H. Stickney, Aaron Sawyer, Geo. H. Peabody—*Committee.*

MANUFACTURES AND GENERAL MERCHANDISE.

Your Committee on Manufactures and General Merchandise respectfully submit the following report of their awards in gratuities :—

Mrs. C. A. Lawrence, Antiquarian Ware, $2; J. N. Burbeck, Display of Soap, $2; Lewis P. Foss, case Dentistry, $1; Mrs. Mary Page, Jar of Cocoons, 50 cents; G. F. Priest, Ottoman, 50 cents; Perkins & Bradstreet, Display of Soap, $1; Stephen C. Osgood, Chairs, $3; Daniel Peabody, Clothes Wringer, 50 cents; W. H. Shirley, Flower Bracket, 50 cents.

N. E. Ladd, Charles Ingalls, D. Bradstreet—*Committee.*

FANCY WORK AND WORKS OF ART.

The Committee on Fancy Work and Works of Art award to Mrs. Eben G. Berry, of Danvers, for Oil Painting, Roman Forum, $3; Oil Painting, Sea Shells. $2; M. P. Needham, of Peabody, for Oil Painting, Pair of Panel, $2; Oil Painting, Pallet, $1; Oil Painting, Cherubs, $1; Nellie Stanley, of Salem, for Crayon point Drawing from Model, $1; A. B. Pike, Crayon Picture, $1; George F. Priest, of Danvers, Book of Designs, $1; Charles H. Masury, of Danvers, one pair of Alto-Relievo Tablets, $2; Eveline A. Fellows, of Danvers, five Ceramic Paintings, $1; S. F. Eveleth, of Danvers, one pair of Terra Cotta Models, $1; Mrs. Mary C. Tapley, of Danvers, Specimens of Marking in Ink, $1; Annie P. Newhall, of Peabody, Specimens of Marking in Ink, $2; Mrs. Dr. Fowler, of Danvers, two Crayon Pictures, $1; Mrs. G. A. Gunn, Embroidery Shawl, $2; Mrs. Elnathan Dodge, of Danvers, Ottoman Cover, $1; Eliza Trask, of Danvers, Embroidered Night Dress, $1; Mrs. Lois A. Dudley, of Danvers, Embroidered Night Dress, $1; Mrs. S. M. Griffin, of Danvers, Embroidery, $1; M. E. Campbell, of Danvers,

Embroidered Skirt, $1; Mrs. G. P. Buckley, of Danvers, Embroidered Night Dress, $1; Ella Wyman, of Middleton, Feather Wreath, $1; Anna L. Roach, of Danvers, Ebony Frame, &c., $1; Annie P. Clark, of Topsfield, Rug and Toilet Set, $1; Emily F. Carlton, of North Andover, Samples of Tatting, $1; Miss Frank L. Gustin, 13 Tidies, $1; Mrs. Anna Southwick, of Danvers, two Ottoman Covers, $1; Eliza Trask, of Danvers, Ottoman Covers, 50 cents; Sadie A. Bushby, of Peabody, Toilet Set, 50 cents; Mrs, Gilman Andrews, of Salem, Card Receiver, 50 cents; Abby Sumner, of Peabody, Wax Cross, 50 cents; Mrs. Thomas Hoyt, of Middleton, Chair Cover, 50 cents; Mrs. J. P. Tufts, of Danvers, Air Castle, 50 cents; Jessie R. Merriam, of Danvers, Toilet Set, 50 cents; M. Etta Sawyer, of Danvers, Hair Work, 50 cents; C. L. Silvester, of Danvers, Embroidery, 50 cents; Mrs. Gilbert B. Emerson, of Danvers, Towel Rack, 50 cents; Arthur F. Gray, of Danvers, India Ink Copies, 50 cents.

Andrew Nichols, for Mrs. Edward W. Jacobs, Mrs. John Todd, Miss Ellen M. Putnam, Miss Rebecca Goodell—*Committee.*

CHILDREN'S WORK.

Work by children under twelve years of age—Emma J. Cann, Danvers, Rug, first premium; Jessie F. Fowler, Danvers, Knit Jacket, second premium.

Gratuities of 50 cents as follows: Mattie Robarts, Beverly, two Tidies and Motto; Helen D. Bacon, Danvers, Toilet Set; Abbie E. Richards, Danvers, Motto; May Vaughn, Danvers, Lamp Mats; Gracie H. Putnam, Danvers, Patchwork; Martha P. Swinerton, Danvers, Motto; A. W. Perry, Danvers, Cushion, Motto, and Tidy; Arthur Hammond, Danvers, Cigar Stand; Anna S. Berry, Danvers, Motto; Lillie P. Bell, Danvers, Cushion; E. Louise Richards, Danvers, Mot-

to; Mary F. Brown, Danvers, Motto; Hattie Batchelder, Danvers, Motto; Martha Dougherty, Danvers, Motto; Edna M Legro, Danvers, Motto; Mary F. Perry, Danvers, Toilet Set; Kittie E. Wiley, Peabody, Tidies.

For the Committee, MRS. E. G. BERRY.

FARMS.

Your Committee have had but one application to examine farms, entered for premium, and this was visited but once, (in July,) during the year. This farm (if it may be called such) is situated in the western part of Haverhill, and belongs to Mr. Rufus Goodwin, and consists of about ten acres, nearly all of which is under cultivation. In addition to the statement of Mr. Goodwin, which is presented herewith, your Committee desire to say that, in awarding to him the Society's second premium of $20, it is not given because of any results attained of a magnitude corresponding with such as have been reached by many farmers in the county, but because his work indicates the possession of a desirable faith in soil cultivation as a remunerative pursuit, and because he has shown, in a comparatively small way, what may be accomplished by intelligent industry, patience, and perseverance in the pursuits of husbandry. Mr. Goodwin is a machinist by trade, and leaving the shop where he was employed at high wages, in 1872, he entered upon the work of clearing his ten acres of land of bushes and rocks, and bringing it into good tilth. The results of his labors for three years abundantly proved that it is *safe* for mechanics and others engaged in industrial labors to throw down their shop tools and take up the "shovel and the hoe" on the land. He has proved that "ten acres is enough" to support a good sized family, and leave something in the bank each year for "wet days" in life. He has turned his rocky land into what may be called a garden,

or what promises to be a garden after a few years more of labor is bestowed upon it. In accomplishing this result, great good is done, inasmuch as it encourages others, who have small means, to turn in the direction of the land for support. If it is proved that five, six or eight hundred dollars a year can be realized from the cultivation of a small homestead in Massachusetts, in Essex County, it surely must attract attention, and lead to the rapid taking up of the tens of thousands of acres of cheap, but good, lands which are now entirely neglected. Mr. Goodwin enters largely into the cultivation of fruits and vegetables, which find a ready sale in the near cities of Haverhill and Lawrence. His fruit trees are young, but very thrifty, and his vines give promise of heavy crops in the coming years. There are many hundreds of acres of good pasture land in the county,—land as good as that upon which Mr. G. is at work,—which can be purchased at about $25 per acre; and to these neglected acres special attention is called. The Chairman of this Committee purchased, a couple of years ago, sixty acres of most excellent land, at a cost of $20 per acre, and this is situated not more than two miles from the city hall in Haverhill, with a population of 15,000. It is this class of lands, of which there is an abundance, which invites the attention of young men and mechanics who do not find constant employment. It is hoped that the Farm Committees will have in the coming years many "farms" to inspect, which are now comparatively unproductive and valueless, and that Mr. Goodwin's example will be largely followed.

For the Committee,

Jas. R. Nichols, *Chairman.*

STATEMENT OF RUFUS GOODWIN.

I bought my place, which contains ten acres, in October, 1871. I did not go on it myself till April, 1873. Three

acres of the land were under a fair state of cultivation; the remaining seven acres were pasture land, rough and stony, woodland and scattering trees amounting to twenty-five cords of wood.

I have cleared the land, sinking and blowing out two hundred large stones; have dug and built one hundred and seventy-five rods of stone wall, put in seventy-five rods of underground drain. I should think I have used forty cords of manure, seventy-five bushels of salt, and from six to seven barrels of superphosphate. I have set out 180 pear trees, 30 apple trees, 85 peach trees, 10 quince trees, 100 gooseberry bushes, 100 currant bushes, 1000 raspberries, 300 hills rhubarb, 250 asparagus roots, and 300 grapevines.

In 1873 I sold from my place $412.58 worth of produce. In 1874, $708.94 worth. In 1875, $841.58 worth. In July and August of this year, I have sold $229.42 worth.

IMPROVED MEADOW LAND.

There has been but one application for premium the present year on improved meadow land. James J. H. Gregory, of Marblehead, has improved a piece of meadow land in the most thorough manner, has raised on it different kinds of vegetables with good success, as his statement shows. He has done it on a large scale, as he does his other farming, and there is no doubt has made it profitable.

The Committee visited it in the latter part of August, in a very dry time, and found it suffering for want of rain. His onion crop was good for this season, but it appeared to have suffered considerably from drought. As to the amount of the crop, the Committee have not been informed.

Meadow land, where the mud is deep and thoroughly drained, is liable to suffer from drought like other land, and your

Committee were of the opinion that in some cases such meadows might be benefitted by damming the water at certain seasons of the year, at the outlet of the ditch, and retaining such an amount of water in the ditch as may be necessary to keep the land moist, or to some extent guard against drought.

Meadows require some dressing from the upland in shape of sand, gravel, loam, or something of the kind. Most persons use such material as may be nearest at hand, or can be used with least expense, and if a person is successful, he is apt to think that the material he used is the best, hence there are different opinions on the subject. Sand can be used with considerable less expense than gravel, as it is much easier shovelled. I have been informed by those who have used both sand and gravel, on the same meadow, that gravel is decidedly the best. For myself, I have had considerable experience in cultivating meadow land, but never used sand, as I had access to none within a reasonable distance. I should recommend, however, that persons who have access to different material, to try the experiment and judge for themselves. The Committee would recommend that the first premium, of fifteen dollars, be paid to James J. H. Gregory, of Marblehead, for his improved meadow land.

It is an old saying that experience is the best schoolmaster. The writer therefore proposes giving some of his own experience in cultivating meadow land, believing that he has had longer experience than most others, although it may not be so instructive.

Fifty years ago my father had a few acres of meadow land in the central part of his farm, adjoining the road and near his buildings, which he considered of but little value, as it produced but little hay, and that of poor quality. He often said it was an eyesore to him, and that he would gladly give it away, if it could be removed, and his hill land, (as he called it,) could be moved in to take its place. The most of the year it was covered with stagnant water; in winter it was covered with ice, where the boys congregated to play and

skate; in spring it was made hideous with the croaking of frogs and paddocks, and in summer the blackbirds built their nests in the tall grass. In the year 1827, (I think it was,) my father being feeble, I concluded, with his consent, to take one step at least toward removing the nuisance, which was to dig across the road six or seven feet deep, make a new bridge, and thence into the land of my neighbor, to drain off the water. This work I accomplished, and spread the contents taken from the road on the borders of the meadow, which produced large crops of hay.

The next year, the water having drained off, I dug a ditch across the deepest part of the meadow, and found the greatest depth of mud about three and a half feet, but the outlet across the road was not sufficiently deep to draw the water more than about three feet from the surface. I also dug some ditches in the other direction, as circumstances seemed to require.

In the spring of 1829 my father died, and I came into possession of the farm by purchase from my brothers and sisters. Now in regard to the meadow thus far, I had been successful; the stagnant waters had been drawn off, and the noxious reptiles had abandoned it, and the question now was, how can it be improved and made profitable?

I attempted to plough it, but was unsuccessful, as sedge beds were scattered over the meadow, which, in addition to cranberry vines, made it impervious to the plough. Again the question came back, how can I improve the meadow? There was no precedent to my knowledge, as draining and cultivating meadows was entirely a new thing, and my neighbors were like Job's comforters, had no faith in my success, and thought it had better go to cranberries, although they were of but little value. The next two years I did but little to the meadow, except draining it more thoroughly, as circumstances seemed to require, by cutting off the cold springs on every side, and spreading the subsoil on to the surface,

which, with hayseed being sowed, caused good crops of English Hay without manure.

In 1833, I built a new barn, 84 by 40 feet. The cellar was dug where the old barn had stood for sixty or seventy years. The contents of the cellar, which was a gravelly loam, were removed into a large heap, mostly by the plough and ox shovel. The ground was strongly saturated to the depth of four or five feet with the leachings of the manure heap, and the urine from the cattle, where they had been stalled for so long a time.

In the fall and during the next season, the contents of the barn cellar were spread on the meadow as top dressing, on which I sowed herdgrass and red-top seed. The grass soon sprang up rank and strong, and the next year it produced a good crop of hay. For several years after it produced two large crops per year without more top dressing.

I think there was more hay produced on that meadow for a series of years than on any land that I have ever known in the same length of time. I never have known but once the amount per acre that it produced at one crop; that must have been some years after I commenced mowing it. That was sold from the field and went to the stable in the village. Two loads, about three tons, were carried away. I then surveyed the land that produced it, and found it less than one acre. I then computed it, and found the product per acre sixty-seven hundred and sixty-five pounds. I thought at the time that the crop was not so heavy as it had produced some previous years. The mud in the meadow has settled one-half since I first commenced draining it, and it requires much more top-dressing now than it did in the early years of its improvement, to produce a like crop. It rarely suffers from drought, as there is usually water in the main ditch coming from a spring not far distant.

The most of the ditches are kept open. Some of the ditches that I first dug were filled to within about eight inches of

the top of the ground with small stones, after making a small culvert at the bottom for the water; then covered the ditch with gravel. The most of the ditches that I have filled with small stones, as above named, have become clogged and filled up, and it has been necessary to dig new ones. I have supposed that muskrats and meadow moles in some cases have had something to do in filling up among the small stones on meadow land, where there is a small depth of mud. On higher land the woodchucks will sometimes burrow and clog up the ditch.

I have used a large amount of stones for underdraining, and in some cases it has been done to good advantage, as the subsoil would pay for throwing out for top-dressing, and the small stones were buried out of sight. I should, however, in most cases, recommend tile for underdraining, where they can be buried sufficiently deep to protect them from frost. I have extended these remarks far beyond what I intended when I commenced, and will now close.

JOSEPH HOW, *Chairman.*

STATEMENT OF J. J. H. GREGORY.

Gentlemen of the Committee:—The Improved Wet Meadow I enter for your examination is a tract of about a dozen acres, located on the Glover Farm in Marblehead, and bordering on Atlantic Avenue, which extends from Marblehead to Swampscott. The meadow is muck, from two to six feet deep, resting on clay. Previous to reclamation, the tract was but of little value for any purpose; it was wet, rough, and mostly covered with rushes and coarse grasses. About twenty-five years ago there was an attempt made to reclaim a small portion of it, but there then being insufficient drainage, it was a failure. The first step taken was to open a deep ditch of about eight hundred feet in length, which was walled with stone its entire length, at the cost, when finished, of about a dollar a linear foot. The design was that this ditch should

serve to drain not only the meadow, but a large tract of low land in the rear of it. The second step was to lay tile or hemlock boards from several springs to the main ditch running through the middle of the meadow. These steps having made the meadow sufficiently dry, the hummocks, hillocks, and tussocks were now attacked with picks and "tormented" with the harrow until the surface was made comparatively smooth. In the course of the work, some of the rougher material we carted off and burned. The meadow, during this and subsequent treatment, was handled in four sections of about equal area, divided by the road running through it, and the main ditch cutting the road at right angles. One of these sections was the first season ploughed and planted to cabbage, and gave an excellent crop. Two of the other sections, in the course of the next two years, were also put under the plough, and yielded, with about the usual quantity of manure, excellent crops of Mangold Wurtzels, and Squashes. Potatoes have succeeded well in dry seasons, but in wet seasons are more affected with rot than those grown on common soil. Carrots, when tried in a dry season, are much inclined to grow "prongy." About a quarter of the area, after applying to the surface gravelly loam or sand, at the rate of about seventy-one horse-cart loads to the acre, has been planted to onions with excellent success. Heavy crops of hay have been taken from every portion of the meadow, usually two crops each season. In the early handling of this meadow, considerable clay taken from the bottom of the main ditch was spread over the surface.

IMPROVING PASTURE AND WASTE LAND.

On the 28th of July, your Committee visited the farm of Joseph Horton, Ipswich, to examine a piece of land entered for premium. There being no other competitor, the Com-

mittee, considering his experiment a deserving one, have awarded him the first premium of $15. Mr. Horton's statement is enclosed.

The Committee would suggest that one item of expense the carting off of the sods, &c., might have been saved by burning on the land. One of the Committee remarked that he thought the burning might have been omitted, and that the simple turning over of the sods and bushes would have been sufficient to reclaim the land.

This brings in discussion the comparative merits of burning and non-burning,—that is, merely ploughing. Where there is a superabundance of vegetable matter, as on peat land and on some clay soil, burning has proved of much advantage. Mr. Horton's land seemed to be somewhat of a clayey nature, though not decidedly clay land, yet a certain admixture of the latter with gravel and loam. We should also judge that it was lacking in humus or vegetable matter.

We think a combination of the two methods mentioned would have been the best; that is, to have burnt the toughest sods and bushes, which would have taken a long time in rotting, and to have left all grass or pliant sods on the land. The process which Mr. H. pursued is called "Paring and Burning," and is more common in England than in this country. Mr. Colman, in his "European Agriculture," devotes some attention to this subject. He says, "The process of paring and burning the surface of land has been practised with great, though not always with equal success, in many parts of the country. The objects of it are threefold: first, to reduce the coarse vegetable matter on the surface to a state of decomposition, that it may be supplanted by a more profitable vegetation; the second, to destroy grubs, insects, and the larvæ of insects, which infest the soil and are pernicious to the cultivated crops; and the third, to convert the coarse vegetable matter on the surface into ashes, for the nutriment of the crops which are to follow. This process is not to be

confounded with that of burning clay for the purpose of manure, and of rendering the soil friable and pervious to the roots of plants." The mode of burning described is the same as practised by Mr. H.,—that of slow, mouldering fires,—but the burning itself seems to have taken place on the land.

Mr. C. quotes the following, which certainly seems a remarkable statement: "An acre of land from which the turf was taken in the common mode of paring and burning, appeared to have produced an average of 2,60 bushels of ashes, which, at their mean weight of 65 pounds to a bushel, when dry, would give 172,900 pounds, or rather more than 77 tons per acre."

We hardly know how to estimate the quantity of ashes produced on Mr. Horton's land from the information given. He says twenty loads. Without knowing the size of the loads, we shall estimate that each load contained fifty bushels, which would give a total of 1000 bushels, and at 25 cents a bushel, would be worth $250.

Mr. C. also goes on to state what has a very important bearing on the subject, that "it has been said that the destruction of vegetable matter in the soil must necessarily impoverish it; and that it would be much better to bury this vegetable matter, where, by a slow decomposition, it might serve to afford nutriment to the crops to be cultivated. There are, in the first place, some mechanical difficulties in the case. Where a piece of heath land, covered with coarse grasses and low bushes of furze or fern, is ploughed, it is extremely difficult, even by the most severe process of pressing or rolling, to make it lie flat, and so consolidate it that it can be cultivated to advantage. This is stated to have been the fact, on an extensive heath in Surrey, where cultivation, under the practice of paring and burning, succeeded well, but very ill where the land was only turned over without paring and burning."

"There are certainly strong reasons, in such cases, for par-

ing and burning fields of this description; but they do not apply to those lands where the vegetable matter is of a different description, and would, by being covered over, be speedily brought into a state of decomposition. In the process of burning, it is evident that none of the earthy or mineral constituents, or what are called *inorganic* portions of the soil, are consumed. But all the vegetable matter, with the exception of that portion which has become charred in the process, is destroyed."

"The humus of the soil serves to render it more friable; it absorbs moisture from the atmosphere, and it retains heat, and, in these respects, if in no other, contributes to vegetation. In dissipating this matter, then, by burning, we must look for some compensation in the ashes which are produced, or in the mechanical effects which this burning operates upon the soil. The ashes themselves are powerful absorbents and retainers of moisture, and they answer a valuable purpose in the disintegration, or loosening, of the soil. They certainly, in many cases, operate as an efficient manure."

"The expediency of paring and burning land must, as I have remarked, depend upon the nature of the soil which is to be subjected to the process. On light, sandy, or gravelly soils, where the vegetation is thin and sparse, it is strongly objectionable."

After having given Mr. Colman's instructive analysis of the subject, we shall only add that we would suggest to Mr. Horton that the ploughing under, of several green crops, like clover, would be likely to restore any loss of vegetable matter which may have been incurred in the process of burning.

J. D. W. French, *Chairman.*

STATEMENT OF JOSEPH HORTON.

To the Committee on Improved Pastures and Waste Lands: Gentlemen.—As the land that I have offered for the society's premium, having been inspected by you, received the same

treatment as a parcel offered last year, I quote in full from the "Transactions" of 1875, page 110, which gives in detail my method of treating such lands:

STATEMENT.

"The land upon which I operated was about two and one-half acres of old pasture. The surface was raised into ridges and hillocks, and for the most part covered with bushes. Treatment: by ploughing I levelled the ridges, tore up the bushes, getting out what roots I could. I then carted the whole into a pile and started a fire, which I kept going until all were consumed. The field was then ploughed again and seeded to grass. Twenty cart loads of ashes, the amount obtained from the fire, being applied for dre sing."

But as a great part of this dressing was blown off by the wind, I afterwards applied four cords of stable manure as a substitute.

"This method has decided merit over all others that I have tried, as it thoroughly and at once clears the land of all noxious growths, works the soil, leaves it in such a condition that it can be treated readily and in a first-class manner, and, as it furnishes its own manure, comparatively cheap. In regard to the chemical properties or value of these ashes, I can give no information. I simply know that the land upon which they were used does well, and as yet shows no sign of running out.

EXPENSE OF IMPROVEMENT.

Ploughing and clearing,	$20.00
Ploughing and preparing for seed,	20.00
Seed,	3.00
Four cords of manure,	28.00
Total,	$71.00
Income the first year, 4 1-2 tons of hay, at $25.00 per ton,	$112.50
Income beyond expense,	41.50

OBSERVATIONS ON THE ABOVE STATEMENT AND REPORT.

The reading of the above report gave rise to considerable discussion at a meeting of the Trustees of the Society, when reports of committees were under consideration, and I was requested to append to the report some remarks.

I desire to call attention briefly, first, to the written statement of Mr. Horton, and second, to the observations of the Committee, and the extract presented from Mr. Colman's "European Agriculture." The points in Mr. H.'s statement which seem extraordinary, relate not so much to the simple method adopted in clearing his land, as to the alleged ash results obtained and their assumed fertilizing influence upon the field. To obtain "twenty cart loads of ashes from two and one-half acres of pasture land," it would be necessary for Mr. H. to cut down in bushes, and dig up in roots, and haul to his "pile" at least *five hundred* "cart loads" of the material. This is apparent from the fact that such woods contain only about two and one-half per cent. of ash constituents. A "cart load" of ashes may be assumed to be forty bushels, weighing forty pounds to the bushel; this gives in weight to the load 1600 pounds, and to the twenty loads, 32,000 pounds. It seems utterly impossible to obtain 32,000 pounds of ashes from bushes and roots taken from "two and one-half acres of old pasture land;" and if obtained, the dressing would be enormous. Another inexplicable point in this statement is: how could Mr. H. plough the land, cut down the crop of bushes, dig up the roots, and cart away the immense amount of material, at a cost of *only twenty dollars?* As a "great part of the dressing, (ashes,) was blown off by the wind," the fertility of the field is presumably due to the manure applied. The loss of twenty "cart loads" of dry wood ashes is a serious one, the cash value being, upon the estimate above given, at thirty cents a bushel, $240, more than twice the value of the hay crop secured.

It only need be said that it requires but a glance at this

statement to learn that it was prepared in a hasty manner, and without due consideration. There is probably no intention of inaccuracy of statement, and these strictures are kindly made with the view of securing in the future more exact and reliable accounts of farm labors and farm improvements. The estimates here made differ from those of the Committee, in item, cost, &c., but not essentially in general result.

As regards the astonishing yield of ashes from an acre of land, alluded to by Mr. Colman, and quoted by the Committee, it may be said that, that ash result came from the burning of *turf*, and the ash was composed of at least *ninety per cent. of silica or sand*, and therefore it was comparatively valueless. Pure *peat ashes*, I have found to give, upon analysis, eighty-one per cent. of silica, which accounts for their small value as plant food. *Turf* is sand, with a small amount of vegetable matter diffused through it, and when it is burned, the sand remains behind in a heap, *resembling* pure ashes. Mr. Horton's experiment is different; he alleges that his ashes were the result of the burning of bushes and roots. The "heath" and peat lands of England and Ireland are very different from our waste lands, and the methods of treatment for recovery cannot well be the same.

The treatment pursued by Mr. Horton is essentially that which was adopted by our forefathers one and two hundred years ago. A rare old book may be found in the library of the Essex Agricultural Society, entitled, "Essays upon Field Husbandry in New England, by Jared Elliot, A. M.," published in 1760, in which a statement is made on page 6, of experiments in reclaiming waste land, which in methods adopted closely resemble those of Mr. Horton. It is to be regretted that we have so little which is new to present upon so important a branch of husbandry.

Jas. R. Nichols.

MANURES.

The Committee on Manures have not received any application for the premiums offered for the most exact and satisfactory experiments in the preparation and application of manures, whether animal, vegetable, or mineral.

This is to be regretted, inasmuch as the successful prosecution of agriculture lies in a knowledge and supply of those ingredients to the soil which are found, by oft-repeated experiments, to be most conducive to the full development of cultivated plants.

The discoveries of chemistry show that all plants are built up of organic and inorganic materials. Their organic part consists of about nine-tenths of their weight, or that part which can be consumed by fire, and the inorganic that which remains in the ash.

Their organic elements are derived from the atmosphere, viz., carbon, oxygen, hydrogen, and nitrogen. Over these man has no control, for when the present harvest is consumed, or decays, these elements, without loss, return to the atmosphere, and are laid up for future use. Hence it is seen, that in the divine economy the same materials are worked over and over again, in the annual harvests forever.

But it is the inorganic elements of plants with which the cultivator has to deal, and over which he has control; for the living plant draws from the dead earth those materials which are indispensable to its healthy growth.

If, therefore, certain plants require in their growth, potash, soda, lime, sulphuric acid, or any other inorganic constituent, and the farmer, repeatedly raises the same crops, upon the same ground, without returning the inorganic matter which he removes in each successive harvest, it is obvious that his crops must diminish from year to year, for it has been found that however small the inorganic matter which a plant requires, if it cannot be found in the soil, the plant sickens and dies.

A striking instance of the failure of grass upon a portion of a piece of peat meadow, which we reclaimed a few years since. The meadow was drained, the surface levelled, and in winter, when frozen, about one hundred ox-cart loads of gravel were hauled upon it to the acre. In the following summer this was spread, covering what grass was growing. In the autumn a compost was spread upon it, and grass seed sown. The next summer the crop of hay was two and one-half tons to the acre.

The herdsgrass standing four feet upon a level upon the lot, with the exception of a small piece upon one end, on which no gravel was spread; upon this part of the meadow, clear peat, with the exception of the compost, the grass attained but half the height of the gravelled part, was very soft, and fell to the ground, for want of silex to give strength to the stem. It is thus seen that for the want of a single element of inorganic matter in the ground, the crop failed one half.

There can be but little doubt that many of the cultivated fields of the county, which produce but a scanty crop without being enriched by stable or barnyard manure, might be greatly improved, at a comparatively small expense, by the application of some inorganic element of manure, (for any matter which makes land productive is manure,) like lime, potash, soda, or any other inorganic element of plants, of which the soil has been robbed by long continued cultivation.

There is ground which at sight looks as if it might be naturally productive, but which scarcely produces grass enough to form any sward. Here, perhaps, one or two simple elements of plant growth are wanting, which, if supplied, might render the land productive.

It is hoped that cultivators the coming season will make careful experiments with the mineral preparations which are for sale, and which are said in some instances to double the crops.

For the Committee,

J. Newhall.

ROOT CROPS.

The first crop viewed by the Committee, was a piece of Summer English Turnips, entered by Hiram A. Stiles, of Middleton. We found the crop suffering badly from the extreme dry weather, and being a vegetable that needs considerable amount of moisture to grow well, and to be of good quality, it seemed that unless rain came soon, the crop must be nearly a failure.

By the statement submitted by Mr. Stiles, the crop does not appear to have been near an average of what he has usually raised. But considering that hardly any crop is up to an average this year, and as Mr. Stiles has given us an excellent description of his method of raising the Summer Turnip, a crop usually very difficult to raise early in the season, the Committee award him the premium of $10.

The Committee next visited the Onion crop of Ira F. Burnham, of Essex. Mr. Burnham's onions were on the same piece of land on which he was awarded the premium on Onions last year.

The dry weather had lessened the crop considerably, as the onions were of rather small size, but very handsome and well ripened. By the statement of Mr. Burnham, his crop appears to be a very fair one, and if he had a suitable season, it doubtless would have been a very large one, as the onions were very even all over the piece.

The Onion crop of Daniel Carleton, of North Andover, was the next entered.

The Chairman of the Committee not being able to visit Mr. Carleton's, it was viewed by other members of the Committee, who found the piece looking finely. The onions were of good size, and apparently would produce a large crop.

By the statement of Mr. Carleton, the amount was somewhat lessened by the ravages of the maggot on some parts of the piece; but, on the whole, it was a very satisfactory yield. It appears, by the statement, that he manured a part of the

piece with a compost, composed of meadow muck, cattle, horse, and hog manure, and the remainder with Cumberland Superphosphate alone.

The yield was the largest on the part manured with the compost. In the extreme dry weather of the past season, the compost would naturally be better adapted to the crop than the Superphosphate. Most of the concentrated manures need a larger amount of moisture than barn manure or compost, to show as good results.

We think the experience of most farmers and gardeners to be, that unless the season is rather wet, they cannot be used to good advantage. We were well pleased to see that Messrs. Stiles and Carleton both had used various kinds of manures, to find out by actual experiment, if possible, what one was best adapted to their respective crops. It is only by such experiments we can decide the comparative value of any new manure that may be offered for sale.

The Committee award to Mr. Carleton for his crop of Danvers Onions, the premium of $10.

We next visited Hayden A. Merrill, of North Beverly, who entered a piece of Marrow Squashes, also a piece of Fottler's Improved Brunswick Cabbage.

The Squashes were handsome and of very uniform size, and of that variety commonly known as the Boston Marrow.

Mr. Merrill's statement of the amount of crop, and cost of producing the same, is annexed, and the Committee award him the premium of $10.

The piece of Cabbages we found to be very handsome, most of the heads being large and solid. The piece was unbroken, Mr. Merrill not having cut any for market at that time. The Committee were unanimous in the opinion that a better lot of cabbages are seldom seen. By the statement of Mr. Merrill, it appears he used quite a number of kinds of manures, mixed with meadow muck, as a compost, putting it in the hill.

The Committee award to him for his crop of Fottler's Improved Brunswick Cabbage, the premium of $10.

On the same day we visited the farm of Francis R. Appleton, of Ipswich, who had entered a piece of Ruta Baga Turnips, also a piece of Mangold Wurtzels.

The piece of Turnips was very uneven in appearance, and injured badly by lice, occasioned, doubtless, by the dry weather; but as the turnip will grow late in the season, there was a chance for the crop to recover and produce a good yield. From the statement of Mr. Appleton, it appears there was not as large a crop as he has usually grown on his farm.

The piece of Mangold Wurtzels was, like the Turnips, very uneven, with many vacant spaces. The seed of the Mangold Wurtzel is very hard to get up evenly.

The better way, we have found to be, is to soak the seed in warm water for twenty-four hours, then dry it so it will not cling together in sowing, or roll it in ashes or plaster and sow at once, covering deep enough to insure moisture, so that the seed will germinate freely.

In the statement of Mr. Appleton, his method of raising, and the amount of each crop, is given; but as the whole amount is consumed on the farm, he makes no estimate of the cost of producing, or value of the same.

The Committee award to him for his crop of Ruta Baga Turnips, the premium of $10.; also for his crop of Mangold Wurtzels, the premium of $10.

On reading the statements of the cost of producing the crops entered for the premiums of the Society, this question naturally suggests itself. For what purpose does the Society offer these premiums? Is it simply for the pleasure of paying out the amount awarded the successful competitor? or does it rather expect in return that their statements shall furnish some new ideas or information gained as to the cost of producing the crop in question?

No new information can be acquired unless we step out of

the old routine, and endeavor by carefully conducted experiments to determine whether the new idea is an improvement on the old, or the new method demonstrated to be a success by the results.

If by using any of the many different kinds of concentrated fertilizers now in the market, we can produce as large a crop as we can by using barn or stable manure, and at one-half the cost of the latter, it is certainly a step in the right direction; a step which we are all in favor of,—that of *decreasing our expenses, and increasing our receipts.*

If, by taking a few hundred pounds of a concentrated fertilizer, and applying it by a few hours' labor to an acre of land, we can produce as large a crop of Potatoes, Squashes, Onions, Cabbages, or Turnips, as could have been produced by the old and more laborious method of applying six cords of stable manure to the same, we have demonstrated practically a fact which commends itself at once to every farmer.

Many farmers do not know the cost of raising any given crop; keeping no record whereby they can judge whether they have made or lost by the operation. Many labor on in the old routine of applying a small amount of barn manure yearly, and adopting the old methods of cultivation, trusting to a propitious season to produce a paying crop.

At the present low rates which farm produce is bringing in the markets, the farmer of this vicinity must of necessity avail himself of every opportunity to lessen the cost of the same, if he would compete successfully with the more favored farmers who cultivate the fertile lands of the West.

Two years ago, in some experiments made to determine the comparative value of the following kinds of manure: Muriate of Potash, Brighton Fertilizer, Barn-cellar Manure, for cabbages,—we broke up a piece of light loamy soil, on the 26th day of July, harrowed and furrowed it on the 27th. On the 28th I manured six rows with a table spoonful of Muriate of Potash, and six rows with a handful of Brighton Blood Fertilizer to each hill, mixing both kinds well with the soil. On

the remaining six rows I put a good shovel-ful of fine barn cellar manure to each hill. On the same day I set the whole piece to Fottler's Improved Brunswick Cabbage plants, two and one-half by three feet apart. The plants all started finely, but those on the Potash soon went ahead, showing very plainly that the Potash was better adapted to their wants than either the Blood or the Barn cellar Manure, although they were doing very well. The piece was cultivated and hoed twice.

On harvesting the crop, almost every plant grown on the Potash had a large solid head, with but very few loose leaves. Those grown on the Brighton Blood Fertilizer had done well, about three-fourths having made good sized solid heads. Those grown on the Cellar Manure had done very well, but evidently needed longer time to form as solid heads as those grown on the other two kinds of manure.

On the next season, (1875,) I tried the same kind of manure on the same piece of land, but changed the crop to Potatoes, using the manures in the same manner as on the previous year. Planted the Late Rose in the second week in May. During the season they were cultivated and hoed twice. The result was somewhat changed; those on the Blood Fertilizer taking the lead, followed by the Cellar Manure,—the Potash evidently being too caustic, the vines not looking thrifty. On digging, I found the crop a third larger on the Blood Manure than on either of the other two; the potatoes were larger, fairer, and more in a hill.

The experiment on Cabbages, in 1874, having been so marked, to test it more fully, I again, in 1875, tried the same kinds of manure, but on a heavier soil. The piece was broken up about the 20th of July, and treated in the same manner as that the year before. The plants were set on the 25th. They started well, but were followed by very dry weather, so that no part of the piece did as well as that the year before; still those on the Potash showed the best result.

I again tried the same experiment the past season, but varied it by sowing the seed in the hill on the 10th of June. The seed came up nicely, but the extreme dry weather that followed through June and July was very unfavorable to the young plants, especially to those on the Brighton Fertilizer, a large part of the plants dying for want of moisture. Those sown on Potash and Barn Manure withstood the drought much the best, and have yielded a very good crop.

In all three cases the Muriate of Potash has produced the most satisfactory results, giving each time the largest product for the least expense.

We would respectfully suggest to members of the Society, who intend to compete for premiums in the vegetable department, that instead of waiting for a crop that has happened to be better than usual, (but why, they cannot tell,) they select a piece of land of the required dimensions, dividing the same into as many parts as convenient, manuring each part differently, with such manures as convenience or fancy may suggest. Keep a careful watch throughout the season, noting particularly any difference which may appear in the several parts, whether for or against the crop, and tracing it, if possible, to the original cause, whether that may be owing to the manuring, depth of planting the seed, or varieties of the same, manner of cultivation, dryness or wetness of the season, or many other causes which may appear small in themselves, but which combined go far toward making the crop a success or a failure.

It is only by following such methods we can acquire the necessary information to conduct farming intelligently and profitably, and which every farmer should endeavor to obtain from his own experience.

Aaron Low, James P. King, Jos. S. Howe, Franklin Alley—*Committee.*

STATEMENT OF H. A. STILES.

Having entered for inspection and premium my crop of Summer English Turnips for the market, it becomes my duty to report some of the obstacles encountered in growing this vegetable the present year. In no season within the history of my experience of twenty years in turnip culture, has it come so near a failure as the present one.

Turnip seeds were sown the last days of April and the first of May, and germinating rather quickly, which is favorable to growth, seldom appeared more promising for a bountiful harvest. The time of harvesting and marketing the early turnip is from the 20th of June until the 20th of July, and before the former period the effects of dry weather were visible on portions of the crop, which continued with extreme heat to check the growth, injure the quality of the turnip, and seemingly lessen the quantity fully one-half to what it would have been with seasonable rains.

The most important requisite to the successful culture of the crop is suitable land. Gardeners sometimes assert that they can raise just as good, clear, and nice a turnip in Autumn as can be grown. True, they may be grown *clear* upon land unfit for the early turnip, but a difference may be noticed in the quickness of growth, fineness of texture, and in its buttery flavor, and glossy whiteness.

The best varieties for table use are the Strap Leaved, White, and Red Top. Questions are often propounded like the following: What kind of land do you have? Do you use *barn* manure or *fertilizers?* Do you sow in drills or broadcast? Do you salt your lands? You must have some secret of which you will not inform us, for we cannot get an early turnip fit to eat.

Having no secrets to reveal, I will briefly state my method of culture this year. In the first place, my land is light, sandy, loamy, and leachy; is quite level and free from stones, and has been under cultivation a hundred years or more.

Lot No. 1 contains about one hundred rods. Ploughed April 20th, using the Michigan Sod Plough. It has been in grass for the last eight years with no manure. Ploughed to the depth of nine inches. Applied evenly upon the furrows about three cords of barn cellar manure, made fine, and harrowed it in with the Randall Harrow. Applied two hundred pounds of Bradley's Superphosphate of Lime, harrowing again with Randall, and smoothing the surface with the brush, the land was ready for the seed. Sowed at the rate of one pound to the acre, of seed, in drills eighteen inches apart, and after the rough leaf appeared, the plants were left six inches apart.

Lot No. 2 contains eighty-seven rods. This lot has been in turnips two years. Applied two and one-half cords of barn manure with 175 pounds of Bradley's Superphosphate of Lime, giving the land the same treatment as No. 1.

Lot No. 3 contains eighty rods. This lot has been in turnips one year. No barn manure was used on this lot. After harrowing with the Randall, I spread by hand broadcast on fifty rods of this lot, one bag of the *Stockbridge Fertilizer*, of the formula recommended for the *Ruta Baga* Turnip. Weight of bag, 200 lbs. Cost, $6. On the remaining thirty rods spread 100 lbs. of Bradley's Superphosphate, and harrowed both lots with the Randall harrow.

There was not much difference to be observed between the turnips side by side. Have formed a favorable opinion of the Stockbridge Fertilizer, and think it *fully equal*, if not superior, to Bradley's, for turnips. Turnips are taken from the ground when about three inches in diameter. After being trimmed and washed, using a brush, are put in bunches containing five in number. June 20th, took from the ground forty bunches, and about six hundred before the fourth of July.

Sold mostly in Lynn and Boston markets, about six thousand bunches, for which I received $300. Gathered in October, for stock feeding, 115 bushels. Value in cellar,

12 1-2 cents per bushel. Total, $14.37 1-2.

Judging from the past, and taking an average season, about 90 bushels, or 4000 bunches, would have been fit for market in July.

Cost of Ploughing 267 rods,	$ 8 00	
" " barn manure, 5½ cords, and applying same,	50 00	
" " fertilizers,	20 00	
" " weeding and hoeing,	50 00	
" " cleaning turnips and marketing,	70 00	
		$198 00
Cr. by 6000 bunches,	300 00	
" " 115 bushels at 12½ cents,	14 37½	
		$314 37½
Balance,		$116 37½

STATEMENT OF HAYDEN A. MERILL.

The piece of Cabbage which I enter for premium, was on broken up sod, and was planted about the first of June with Fottler's Brunswick, with the exception of about one-fourth part, which was set out with plants of the same variety, which I procured of one of my neighbors.

I used two cords of compost in the hill. The compost consisted of one-half muck, the balance being horse and cow manure, night soil, fish waste, sea manure, with about 175 pounds of Muriate of Potash, the whole being well mixed and fermented. The cost of the compost could not, to the best of my calculations, have been over six dollars a cord. And the same estimate would apply to the squash, with the exception of the cost of the potash.

I have marketed only one hundred and fifty of the cabbages, they bringing eight cents each. They were sold two weeks ago, and would probably at this time have brought from $10 to $12 per hundred.

I have counted the heads, and find 1200 that would sell for about $10. per hundred, (the average weight of which

being 16 lbs., four hundred that would sell for about $5 per hundred, one hundred that would sell for about $2 per hundred, and a few that would not be marketable, they being hills that, owing to the dry weather, had to be set out twice, and did not therefore have time to mature.

The piece was measured by Mr. Appleton, and, according to the certificate, measured one-half acre.

COST OF RAISING CABBAGES.

To ploughing and preparing land,	$ 4.00
To sowing seed and setting plants,	3.00
To cost of seed,	1.25
To cost of manure,	17.25
To hoeing twice,	5.00
To cost of marketing, and estimated cost of marketing the rest,	24.00
	$54.50

VALUE OF CROP.

To 150 heads, at 8 cents per head,	$ 12.00
To 1050 heads, at 11 cents per head,	115.50
To 400 heads, at 5 cents per head,	20.00
To 100 heads, at 2 cents per head,	2.00
To fodder,	12.00
Value of crop,	$161.50
Cost of raising,	54.50
Net profit,	$107.00

The piece of Squashes which I enter for premium to the above Society, according to statement of H. A. Appleton, sworn surveyor, measures ninety-five rods, on which I have grown seven tons of Marrow Squashes, which, with the exception of one-half ton, have been fine marketable squashes. I sold the earlier squashes, about two tons, at $1.50 and $1.25 per

cwt. Then sold at $1.00 about one and one-half tons. The remaining three tons were sold at $15.00 per ton. The remaining one-half ton was sold at less price, and fed out to the cows.

I used four cords of compost, spreading on and harrowing in with Randall's harrow, three cords, and putting the remainder in the hill. The compost consisted of one-half muck, with the balance made up of horse and cow manure, night soil, and a small amount of fish waste. It was well thrown over and pulverized. The land has been up for several seasons, and was a very dry piece. The latter fact, considering the dry season, was against the raising of a larger crop.

COST OF RAISING SQUASHES.

To ploughing and preparing land,	$ 6.00
To sowing seed,	.50
To cost of seed,	2.00
To value of manure,	24.00
To hoeing twice,	5.00
To harvesting and marketing,	25.00
	$62.50

AMOUNT OF CROP.

Two tons, at $37.50 per ton,	$75.00
One and one-half tons, at $20 per ton,	30.00
Three tons, at $15 per ton,	45.00
One-half ton, at $10 per ton,	5.00
Value of crop,	$155.00
Cost of raising,	62.50
Net profit,	$92.50

STATEMENT OF DANIEL CARLETON.

The half acre on which my Onions grew was divided into two pieces by your Committee—one piece of forty-one rods,

and one of 39 rods. On the first piece, the crop of 1874 was onions. Barn cellar manure, at the rate of about twenty-five loads, and Cumberland Superphosphate, at the rate of half a ton per acre, were used. On the second piece the crop and manure for 1874 were the same as on the first. In 1875 the crop on both pieces was onions; the first piece was manured with Cumberland Superphosphate alone, at about twelve hundred pounds per acre. The second piece was manured with barn cellar manure alone, at about thirty loads per acre. For the crop of 1876, the first piece was manured with about twenty-five loads of thirty bushels each per acre, being a compost of meadow muck, and cattle, horse and hog manure, ploughed in, in the fall of 1875. The yield on this piece was 158 bushels and a fraction over.

For 1876, the second piece was manured with Cumberland Superphosphate alone, at about 1500 pounds per acre, applied just before sowing the seed, and raked in. The yield on this piece was 136 bushels.

The soil of both these pieces is a dark strong loam, with a rocky subsoil. The land was ploughed once in the fall of 1875, and twice this spring, at the last time ploughing six furrows at a time, and then raking level with a common hay rake. The seed was sown on the 8th day of May with Matthew's Seed Drill, in rows fourteen inches apart, using four and a half pounds of the yellow Danvers seed per acre. The crop where the superphosphate was used ripened the earliest. Where the manure was used, the onions had been just pulled when viewed by your Committee, and then looked rather green, but they all dried off, so that they were housed before the close of September. The onions were harvested by pulling them by hand, and throwing three rows together, and letting them lie a few days; then turned them by raking six rows together, and, when thoroughly dry, carted them to the barn, where they were topped, and every basket of onions weighed, allowing 52 pounds per bushel. The yield of the crop was somewhat affected by the ravages of the maggot.

The onions, however, were very sound and hard, and of good size, there being but few small ones and scarcely any scullions. The cost of raising crop on the half acre was as follows, viz.:—

To plowing and preparing land,	$ 9.00
To sowing seed,	1.00
To cost of seed,	3.50
To Superphosphate,	8.50
To value of manure on the land,	16.00
To weeding five times,	25.00
To harvesting,	20.00
	$83.00
Amount of crop, 294 bushels, at 75 cents,	220.50
Net profit,	$137.50

STATEMENT OF FRANCIS R. APPLETON, OF IPSWICH.

The half acre of Ruta Baga Turnips, which I enter, was a part of a field of about one acre. They were planted on the middle of June, in drills two feet and a half apart. The soil is a heavy clay loam, thoroughly drained with tile, and has been in grass for the previous years. It was ploughed last Fall, and again this Spring, and thoroughly harrowed. To prepare the land for the seed, trenches were made with the plough, and barn-yard manure put in them,—twelve ox-cart loads in all for the half acre. These were then covered by the plough, making a ridge where before was a trench, and rolled. Just before the trenches were covered, there was sown upon the barn-yard manure a mixture of ashes, superphosphate of lime, plaster, and Brighton manure, in all six bushels. The seed was put in with a hand-drill, care being taken to do this immediately after the rolling. It is important that the above operations should follow one another in quick succession, leaving the least possible interval between

the stirring of the soil and the planting of the seed. The plants were thinned to about ten inches distance from each other. They were cultivated by a horse once, and the thinning and weeding was done by a man with a common hoe. The yield from the half acre was 256 bushels; weight sixty-three pounds per bushel, or over eight tons in all for one half acre.

This result is not satisfactory, nor does it equal the average crop of this farm, owing to the long drought. No rain of any account fell for two months after the seed was planted.

The half-acre of Mangold Wurtzels which the Committee viewed, was a part of the same field, as described in the above statement in reference to my crop of Ruta Bagas. The seed was planted in the middle of May, and the ground received the same treatment as the Ruta Baga crop, excepting that they were cultivated, weeded, etc., twice during the season, and the land had upon it in the season of 1875, a crop of Indian corn, and in the three preceding years, grass.

The yield of the half acre was five hundred and sixty bushels, weighing sixty pounds per bushel, or nearly seventeen tons in all. The superiority of this yield over that of the Ruta Bagas, is greatly owing, probably, to the month's earlier planting, which gave the seed the benefit of the May rains.

STRAWBERRY CROP.

The Trustees awarded to Benj. F. Huntington, of Amesbury, for his crop of Strawberries, the premium of $10.

STATEMENT OF BENJ. F. HUNTINGTON.

The crop of Strawberries which I present for premium, was raised on ninety rods of land the present year, on land

which was the preceding year planted with potatoes, and in the spring of 1875 was manured with five cords of stable manure, and fifty bushels of ashes, which I estimate at one half the cost, the other half remaining in the soil for future crops. The plants were set in May, 1875, in rows three feet apart, and twenty inches apart in the rows, making beds five and one half wide, and paths one and one half wide. The runners were allowed to grow and fill the space between the rows. In the autumn, about the middle of November, the whole piece was mulched with a light coat of pine leaves, which was left on the following summer. On top of the pine leaves was put a good coat of meadow hay, which was removed about the middle of April.

The manure was harrowed in with a Randall Harrow, (which, by the way, is an excellent tool to have on a farm.) When I entered my crop, (about the middle of June,) the plants were looking finely, but soon after, the rust injured the vines very much, so that I cannot report over two-thirds of an average crop.

The following is the cost of cultivation :—

Preparing ground, setting plants, weeding, &c., 33 days	$49.50	
Picking 2700 boxes, at 2½ cents,	67.50	
Marketing,	15.00	
Manure and ashes,	25.00	—$157.00
Credit by 2700 boxes of berries, at 15 cents,	$405.00	
2500 plants sold,	12.50	—$417.50
Balance in favor of crop,		$260.50

From actual measurement I hereby certify that the above crop covered ninety rods of land.

JOSEPH MERRILL.

TREADWELL FARM.

The Committee on the Treadwell Farm respectfully submit the following report:—

The farm is still under the management of Mr. Philbrook, by direction of Thos. W. Pierce, Esq., the lessee of the farm. The Committee is pleased to be able to state that the farm has been well cared for during the past season. It has been kept clear of weeds, the cultivated crops have been bountifully dressed with barnyard manure and other fertilizers, and the products have been very satisfactory, notwithstanding the severe drought of last summer.

By permission and under direction of the Committee, very many bushes, that of late years have been encroaching upon the borders of the fields along the walls, have been thoroughly eradicated, improving the appearance of the farm as well as its power of production. Desirous of aiding Mr. Pierce and his able foreman, Mr. Philbrook, in their efforts to improve the appearance as well as the utility of the farm, the Committee has with pleasure fulfilled the instructions of the Trustees, in making all necessary repairs to the buildings, preparatory to painting. The buildings were painted with one coat this last fall, and it is proposed to put on the second coat in the spring, after which it is believed that no member of the Society need be ashamed to direct the attention of a stranger to the farm of the Essex Agricultural Society.

The experiment begun two years ago for the purpose of showing the comparative value of barnyard manure, and of two popular commercial fertilizers, has been continued this year. By referring to the reports of the two years previous to this, it will be seen that one* acre of land was divided into four equal lots. No. 1 was manured with an amount of Russell Coe's superphosphate, which should equal in cost barnyard manure at the rate of eight cords to the acre. Lot No.

* By a clerical error it was made to read *two* acres in the two reports above referred to.

2 was manured with Brighton Abattoir fertilizer, of the same cost. Lot No. 3 was manured with barnyard manure, at the rate of eight cords per acre. Lot No. 4 had no manure at all. All the above fertilizers were applied the first year with nothing else. The product of the lots for each of the years is as follows:—

Lot No. 1, first year, 1510 lbs. Barley; second year, 400 lbs. Hay; third year, 130 lbs. Hay. Lot No. 2, first year, overgrown with charlock; second year, 1200 lbs. Hay; third year, 460 lbs. Rowen, 280 lbs. Hay. Lot No. 3, first year, 1890 lbs. Barley; second year, 1300 lbs. Hay; third year, 530 lbs. Rowen, 375 lbs. Hay. Lot No. 4, first year, 1310 lbs. Barley; second year, 382 lbs. Hay; third year, 75 lbs. Hay.

An experiment with the so-called Stockbridge Chemical Fertilizer has been conducted on the farm during the last season, upon a piece of thin plain land that had not been manured for several years,—land that would probably not yield over 20 or 25 bushels of corn per acre without manure.

The formula for 50 bushels corn per acre in addition to the natural production without any fertilizer, (which cost $27.00) was applied to a part of the land, and on an adjoining part of the same quality green barnyard manure was applied, at the rate of five cords per acre. The part manured with barnyard manure ripened somewhat earlier, and when harvested the stover was somewhat drier than the other part; so that really there was but very little difference in the amount of stover grown upon the different lots. One-quarter acre of that grown with the chemical formula produced 35 bushels of ears at the rate of 70 bushels shelled corn per acre, and 1005 lbs. stover. The quarter acre grown upon the barn manure, produced 45 bushels ears, at the rate of 90 bushels shelled corn per acre, and 920 lbs. of stover.

The total amount of products of the farm the last year, is as follows:

1 acre of Cabbages yielded 2522 heads; 1 1-2 acres of Carrots, 820 bushels; 1 acre 30 rods of Mangold Wurtzels, 480 bushels; 2 acres of Potatoes, 119 bushels; 1 1-4 acres of Onions, 60 bbls. first quality, 28 bbls. small; 5 1-4 acres of Corn, 630 bushels ears; Beets, 100 bushels; Apples, 30 bbls.; Cider Apples, 70 bushels; 2 acres of Hungarian Grass, 5 tons; Corn Stover, 10 tons; Corn Fodder, cured, 4 tons; English Hay, 18 tons; Meadow Hay, 19 tons.

There have been applied to the farm 266 ox-cart loads of barnyard manure, equal to 99 3-4 cords; 20 bushels Ashes; $80 worth of commercial fertilizers.

For the Committee,

BENJAMIN P. WARE.

ESSAYS.

COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

BY ANSEL W. PUTNAM, OF DANVERS.

During the year 1875, the American Agriculturist, in articles from Prof. Atwater, gave to practical farmers the fundamental principles by which they may determine the value of crops as food for cattle.

The corner-stone upon which economical feeding rests, has been discovered, and is composed of albumenoids and carbo-hydrates mixed in certain proportions. For dry cows, and oxen at rest, the ratio may be one of albumenoids to eight of carbo-hydrates. For oxen at hard work, and milch cows, one of albumenoids to four or five of carbo-hydrates. German experiments have proved that it is as important to have these elements in about the right proportion to get good results from feeding, as it is to have lime and sand in about the right proportions to make good mortar.

If crops having an excess of albumenoids are fed by themselves, a part of the albumenoids will be lost, for the want of carbo-hydrates to unite with, as a part of the lime will be lost in making mortar if there is not the proper amount of sand for the lime to unite with. Also if crops having an excess of carbo-hydrates, are fed by themselves, a part will be lost.

As it is a loss to the bricklayer to have pebbles in the mortar, that he must pick out from under every brick before it can be laid, so it is a loss to have large amounts of indigestible material mixed with cattle food.

Perhaps good food for cattle may be defined as that in which the albumenoids and carbo-hydrates are in the right proportion, and a large per cent. of the fodder digestible.

By mixing cotton seed meal with wheat or rye straw, all the digestible carbo-hydrates of the straw can be utilized; but as about one half of the straw is indigestible, under any conditions, it will not become first-class food, even with the cotton seed mixed with it.

The scientific question of to-day is not, "What is any crop worth when fed by itself, as compared with good English hay?" but rather, "How can we grow, harvest and mix other crops so as to make them equal to English hay?" Good pasture grass,—that is, grass that is eaten in a week after it is grown,—is the most perfect food for cattle. The elements are in the right proportion, it is easily digested, and a very large per cent. of it is digestible. Very early cut, well-cured English hay, is the best dry food, if but one kind is to be used.

For making milk, in ripe hay,—except, perhaps, that made from Hungarian grass,—in corn fodder, and in corn meal, there is not enough of the albumenoids to use up all the carbo-hydrates. It is probable that a part of the nutritive value of much of the corn meal, corn fodder, English hay,—from being too ripe,—salt hay and fresh meadow hay, fed in Essex County to-day, is lost for the want of albumenoids.

Prof. Atwater says, " There are two great sources of loss in our common systems of feeding. One is that we often fail to have enough albumenoids in the food to secure the most complete digestion. Another is, that forage crops are not cut when young and easily digested, but are allowed to stand until they are nearly ripe, and much of their material has become indigestible, and of course nearly useless as *nourishing* food."

I look upon the discovery of this loss in stock feeding, together with the discovery of how this loss may be saved, as one of the greatest discoveries of modern times.

Decorticated cotton seed meal and Hungarian grass are sources from which plenty of albumenoids may be drawn to utilize our carbo-hydrates. 100 lbs. of the best cotton seed meal has 28 lbs. of digestible albumenoids, and 17 of carbo-hydrates. Now as it needs but 4 lbs.,—even when used for making milk,—of albumenoids, for its own carbo-hydrates, it has 24 lbs. of surplus albumenoids in every hundred pounds, that may be used to utilize the carbo-hydrates of crops deficient in albumenoids. Take first quality salt hay, for example,—it has 3.4 lbs. of digestible albumenoids, and 41.6 of carbo-hydrates in 100 lbs. ; it needs, say 10 lbs. of albumenoids to make its 41.6 lbs. carbo-hydrates available for making milk, or about 6 lbs. in 100 short; the 24 lbs. surplus in 100 lbs. of cotton-seed will supply what 400 lbs. of salt hay needs to make it good milk-making food.

Hungarian grass has nearly twice as much albumenoids as it needs for its own carbo-hydrates; therefore a ton of good early cut Hungarian grass mixed with a ton of *good* salt hay, will *probably* make as much milk as two tons of average English hay.

There is much probability, as yet, about the proportions in which to mix our crops to get the best results; the quality of crops vary so much when grown and harvested under so many different conditions, that there will be many problems

for each farmer to work out for himself, after getting all the information he can from the chemist and the experiment stations. My object in writing is to induce the farmers of Essex County to work out the problem, how best to utilize the fodder they have or can get most conveniently. Let each one solve the problem for himself, and follow the practice best suited to the conditions of his farm.

I wish to call attention to *principles*, and do not intend,—for I am not prepared,—to give rules for any one to work by. Dr. E. L. Sturtevant, in the July number of the Scientific Farmer, gives us a very valuable article on Hungarian grass, and says: "As the feeding values of articles are usually calculated on the percentage of albumenoids, these analyses would indicate a higher feeding value than we usually see ascribed to millet. It is hard to believe, but it must be at least equal, and probably better, than grass; but if to such an extent as is here shown, whence the discrepancy of opinion in the practical estimates?" As I understand the principles given us by Prof. Atwater, the analysis of Hungarian grass does not show that it is better, or even equal to grass, if fed exclusively by itself, for then about one-half of its albumenoids are lost. The beauty and value of good grass, is, that the nutritious elements are in the right proportion; it is good food by itself; it asks nothing from any other crop, and it has nothing to give to any other crop. But to get the full benefit of Hungarian grass, it must be used with some crop deficient in albumenoids.

Dr. Sturtevant asks, "Whence the discrepancy of opinion in the practical estimates?" I answer, because of the different conditions under which it is grown, harvested and fed. Some let it get quite ripe,—think it better so than green,—and if it is to be fed by itself it may be well to let it stand longer than most crops, for after it is ripe it probably has enough albumenoids to utilize all its carbo-hydrates; but there is a loss in letting it ripen, because a much larger per-

cent. becomes indigestible. A better way is to cut it young, and then feed it with something that needs what it has to spare.

One important and fundamental principle which underlies the securing of good fodder, has been discovered and clearly proved to be correct, by the German experiments. It is this: The younger any crop is cut, the greater its ratio of albumenoids, and the greater the per cent. of digestible to indigestible matter. This shows us why it is that our cows give us most milk in June, when the grass is growing fast enough for them to fill themselves one day with what grew a few days before. They always eat the youngest that is to be had, and the younger the grass they eat, the more milk they will give. I know Dr. Nichols, a chemist and practical farmer, and Dr. Loring, a practical and scientific farmer, have taught the reverse of this.

Dr. Nichols, at the meeting of the State Board of Agriculture, at Fall River, said, "I find that corn fodder, sown broadcast, is perfectly worthless. I demonstrated that practically by experiments upon my herd of cows, and I demonstrated it positively by an analysis of the plant. The results of my observations and researches, up to the present time, have been these: that in raising fodder corn, we must allow it to reach a certain point before we cut it. In the first place we must sow it in drills; it must have access to sunlight and air, and it must be allowed to proceed to a certain stage,—and that stage is the formation of the ear,—before we begin to cut it. Corn fodder fed to animals before that period, will not increase the milk."

At the same meeting Dr. Loring said, "Now every kind of grass has just so much nutriment in it. You want to get rid of the refuse, the woody fibres, and save the sugar, starch, and soluble salts, that go to make up the nutritive properties of the plants. * * * Immature grass is very deficient in the nutritive elements that I have spoken of; every chemist

knows it. * * * You cut, for instance, a large crop of rowen, which is entirely immature, and every farmer knows that it is the most unprofitable thing he can put into his animal. An animal fed on rowen will make an abundance of everything else but milk or meat."

Thus Dr. Loring and Dr. Nichols, in 1871, called both chemistry and practice before the State Board as witnesses, to prove that immature grass and immature fodder corn are not good. Although the testimony of these witnesses now looks to us practically erroneous, yet from a certain scientific standpoint, they were then, and are now, scientifically correct; and my object in making the quotations, is to show wherein they are correct, and where erroneous. Take the corn sown broadcast, for example: It may be very thick, and it may be of the Southern or Western variety, and both practice and chemistry have proved that it may be cut young, and make *first quality* milk-producing food; but let the same crop stand a few weeks longer, and it will get into a condition that "will not increase the milk."

There is a time in the growth of the corn plant, when it has grown all the leaves that belong to the butt stalk. Up to that time it has been the work of the plant to grow leaves filled with elements to be used later in the growth of the plant. After all the leaves that belong to the butt stalk are grown, then the process of hardening the stalk begins. Indigestible matter is rapidly formed, the nutritive matter that was in the leaves is rapidly drawn upon by both stalk and root, and the leaves become like a honey-comb, with the honey drawn out. Now if we wait until this change has taken place before we use our thickly sown fodder corn, it is nearly worthless; but if we use it before it has finished growing its butt stalk leaves, every part of it, from tip to root, is as good as any part is when the ears are formed.

There are two ways to grow good fodder-corn, and the way Dr. Nichols recommends is one of them. He says, "We

must sow our corn, the sweet variety, in drills, and not sow it too thick." One reason why we get good fodder in this way is, by sowing thin in drills, the corn has a chance after it has grown its butt stalk leaves, to go right on growing top stalks and husks, and if we begin to use it before the top stalks and husks have poured their contents into the ear, we get the same quality of fodder that we get before the butt stalk leaves discharge their contents.

Another reason is, by using the sweet variety, the stalks do not become as hard and indigestible as when the harder varieties of corn are sown.

But my cows, and the French chemists, tell me there is a way to get as good fodder, and in about one-half of the time, and that is to sow Southern or Western corn thick, and use it before it has finished growing its butt stalk leaves.

There are two ways to have *very poor* fodder corn. One is, to sow it thick and not use it before the stalks have hardened. If the corn is very thick, it cannot go on and make that perfect growth of top stalks and husks which make such good food when it is thin.

Another way is to sow the Western corn thin, and let it stand until the ears are formed, and the butt stalks are too long for cord wood, but not quite large enough for good saw-logs. This same principle of discharging the contents of the leaves applies to Dr. Loring's rowen. As I understand the laws of growth, the object of the first growth of leaves in the season is to help grow seed stalks and mature seed; but as far as the welfare of the plant is concerned, the late growth, or rowen, is mainly to strengthen the roots for the next season.

Mr. Johnson, of Framingham, at the same meeting in Fall River, said, "August is the time for our grass to start for next year." Very few farmers as yet give the grass roots the benefit of that start, or anything as a substitute for it. Rowen may become over-ripe for fodder, as well as the first growth, or as fodder corn may, but the contents of the leaves, instead of going into stalks, return directly to the roots to be

utilized in the spring, by giving the plant a thrifty start. If we wait until this return process has taken place before we cut our rowen, we have a lot of empty cells. But cut it when the leaves are full, dry it well, and it will be as palatable and profitable to the cow that eats it as the full honeycomb is to the dearest lover of sweets that can be found.

Two years ago I was sadly disappointed by losing the milk from a heavy second crop on a field mowed early in June, and which I intended to feed down close and plough in the fall. The season was wet, grass grew finely through the summer, and as I had plenty of green food without pasturing that field, I thought I would save it till after I cut and fed the rowen on the later cut fields. When I turned the cows into that lot, I supposed I should get an increase of milk; instead of that, ten cows shrunk twenty quarts a day—an average of two quarts each. It took me some time to answer to my own satisfaction why. The solution, as I understand it, can be gathered from what I have said about over-ripe rowen.

All differences of opinion as to the comparative value of crops as food for cattle, will be harmonized when all conditions relating to the different crops are well understood, and all will be found valuable when we know how best to utilize the good that is in them. The questions that arise about full and empty leaves are important, and we need more knowledge before they can be correctly answered. The mixing of different crops to utilize the surplus elements of each, is a very important matter, and I wish particularly to call the attention of such as have salt hay and river meadow hay to use, to the fact that if cut at the right time and well cured, the carbo-hydrates in them are worth as much per pound as in English hay. The best quality of mixed salt hay, according to Prof. Storer, of the Bussey Institute, has 41.6 lbs. of carbo-hydrates in 100 lbs.; black grass has 43.8 lbs.; best upland hay has 43.1; medium quality has 41.1; fresh meadow hay has about the same; the best upland hay has about 9 lbs. of albumenoids in 100 lbs.;

and the best salt hay and meadow hay have about 3 lbs. 6 lbs. of albumenoids in 100 lbs. is mainly what makes the best upland hay better than the best salt hay. Medium quality of upland has 5.4 lbs. of albumenoids, 41.1 of carbo-hydrates, ratio about 1 to 8,—the proportion that is right to keep dry stock in fair condition. Practice for years has proved that dry stock will do very well on plenty of medium quality upland hay. As salt and meadow hay need but two lbs. additional albumenoids per 100 lbs. to make the ratio right for dry stock, and as cotton seed meal has 26 lbs. in 100 to spare, if fed to dry stock, it follows that 1300 lbs. of salt hay, or good river meadow hay, mixed with 100 lbs. of cotton seed meal, is equal to 1400 lbs. of medium quality upland hay. If this is so,—and I ask the farmers of Essex County to prove that it is or is not,—then it must be economy for those farmers who have been in the habit of wintering their stock on salt and meadow hay, and have them very poor in the spring, to sell part of their hay, buy cotton seed, utilize the carbohydrates of what they do feed, and have their stock fat, sleek, healthy and happy, profitable to their owners, and a credit to the county. If this essay shall be the means of leading one farmer to feed his stock so as to better supply their wants and make them more comfortable, the writer will be well paid. It is well to know the conditions under which wheat bran is more economical than corn meal.

When they are fed so as to utilize all their nutritious elements, their value is as five to seven; thus, if wheat bran is worth $20 per ton, corn meal is worth $28 per ton; but as the bran has a surplus of albumenoids, there may be conditions in which a ton of wheat bran will make more milk than a ton of meal; thus the farmer needs to know the composition of the material he is to feed with his grain, before he can tell which it is best for him to buy, at the market price.

Knowledge of how and when to use roots for stock, is important. To feed any of the beet family with average quality

English hay and corn meal, is very unprofitable, because beets are deficient in albumenoids, much more so than turnips, but all roots can be used to the best advantage with poor hay and straw, together with grain rich in albumenoids. This is so because in poor hay and straw the per cent. of indigestible organic matter is large, in all root crops it is small, and by feeding them together, the per cent. of indigestible matter is reduced; and if care is taken to get the proportion of albumenoids and carbo-hydrates right, roots are profitable. This shows us why it is that the English buy so much of the American oil meals. Their climate is well suited to turnip growing; they feed turnips with their straw to get the proportion of digestible matter right, and feed oil meal to get the proportion of albumenoids right. Whether it is economy to grow roots, depends upon what one has to feed with them.

There are other branches of this subject which it would be pleasant to follow, but space forbids.

ORIGINATING NEW POTATOES.

BY JAS. J. H. GREGORY, OF MARBLEHEAD.

Since the general prevalence of the disease popularly known as the "potato rot," which virtually annihilated some standard varieties, and so seriously affected the health of others as to render profit in their cultivation precarious, the public have given great attention to the originating of new varieties, with the object of obtaining in these a constitutional vigor that should manifest itself in greater productive powers, better quality of tuber, and greater capacity to withstand disease. The result of these most laudable efforts has been to give, within the past dozen years, thousands of new varieties of potatoes.

Among these about two dozen stand out prominently as

decided acquisitions, and have nearly replaced all the kinds known previous to that time as standards. How vast a gain these new varieties, from their greater productiveness, have been to these United States, may be inferred from the fact that an annual difference of but a few bushels to the acre makes an addition of millions of dollars in the agricultural returns. Another fact bearing on the importance to agriculture of encouraging the originating of new varieties, is found in the fact that, at the present day, most if not all varieties appear to be so far weak in their constitutions that they deteriorate either in yield, quality, or keeping properties, earlier in their history than was the case with the standard kinds before the dread "potato rot" appeared. There being, therefore, this necessity for new varieties, it appears but wise that all who make efforts thereto should be informed of such facts as observation and experience have to contribute. It is therefore proposed in this paper to contribute a few facts, observations, and reflections, bearing on this subject, to the end that efforts to produce new seedlings may be more intelligently directed than is often the case.

If the various new seedlings that have become established in the community by reason of their real merits, be classified, it will be found that nearly all of them originated in a latitude north of southern New York. If with this fact, we connect one other, viz., that the natural home of the potato is on the high, cool, table lands of South America; and yet a third fact, that taking any variety of the Irish potato, we find that, all other conditions being equal, the farther north it is grown, the better is its quality, I think we may conclude that to develop the best results possible in raising new seedlings, the experiments had best be confined to latitudes north of central New York. If, now, we analyze this matter a little farther, and classify the various new varieties that have become standards, and do this in the light of the number of seedlings raised by seed cultivation, to each new one of real merit obtained, we shall find that by far the greater success has been

obtained in the northern section of this area. In support of this position, we need take for illustration the experiments of the lamented Goodrich of New York, and of Albert Breese of Vermont. Mr. Goodrich, out of thousands of seedlings, obtained half a dozen standard varieties, while Mr. Breese, out of less than a dozen, obtained at least three seedlings that, either universally or in large sections of country, are recognized as standard varieties. Such wonderful results as were obtained by Mr. Breese, are, it is true, rare; but taking the fact in connection with another, that so many of the standard seedlings, and formerly new before the public, such as the old Chenango, Orono, Excelsior, Early Vermont, and Snowflake, originated in the northern portion of this area of country, I think we may advance a step farther in our suggestions, and state that within the area north of the latitude of southern New York, those dwelling in the northern portions have probably the best chances to originate first class seedling potatoes.

We now propose to discuss, 1st, What is required in a new seedling to make it an acquisition? 2d, What steps are most likely to produce such a seedling?

1st. What is required in a new seedling to make it an acquisition? The requirement in a potato to be accepted by the public as a standard, is, that while it equals standards already accepted in other characteristics, it shall also excel them in one or more. Now the characteristics that make up a model variety, relate to yield, quality, flavor, freedom from rot, shape, size, color of skin, number of eyes, depth of eye, color of flesh, keeping properties, soundness at the heart, earliness or lateness of maturity, manner of distribution in the ground, and habit of growth of the vines. I think that it may be assumed that before any originator has the right to send forth any new variety as an acquisition, he must be able to demonstrate that his protege is a decided acquisition in some one of these characteristics and fully up to the average in the remainder. In determining this, he must make more

than a comparison on his own grounds, for from the discrepancy between the results that some originators state they find in a comparison between their seedlings and the standard sorts, and the results that others find when they make the same comparison, it is evident that it is true of seedling potatoes, as with seedling strawberries, new varieties will often do their best on the land where they originated. I would here suggest that it may be a wise step for growers of new varieties to state the kind of soil in which they originated, as the point is not yet settled as to whether or not new sorts do their best in the same soil on which they originated.

From an experience in testing hundreds of seedlings sent to me from different States, in the course of several years, almost all of them claimed as decided acquisitions, by their sanguine originators, I deduce the following suggestions relative to the various characteristics required in a new seedling before its claim to be admitted as a standard variety should be allowed. Taking them in the order given, the yield, under good cultivation, should be *at least* two hundred bushels to the acre. Fancy cultivation of small area will at times give a yield of three or four hundred bushels to the acre, when the same variety, on good potato soil, with good average manuring and cultivation, will fail of yielding two hundred bushels. The flavor and quality, by which latter word I more especially mean dryness, should be up to such a standard as the Jackson White, or Chenango of olden time. For a standard of shape, a medium between the standard oblong and round varieties is most desirable, as there is the least waste in the paring of potatoes of this form, while a larger proportion of the smaller ones will be marketable. Here let me remark that I have noticed that oblong potatoes that are usually equally large at each end, oftentimes under unpropitious circumstances, grow smaller in the middle than at the ends, which makes any potato unmarketable. Another fact noted is that any variety that tapers to a small and rather projecting point where the

stem is attached, is apt to sport in its form, and is unreliable as a cropper. Another fact is, that while all varieties of potatoes that have had their growth stopped by drought before maturity, make the remainder of their growth when they start anew after a rain, by additions which farmers designate by the word "prongy;" some varieties are far more inclined this way than others. In size, while it is absolutely necessary that they shall average as large as the average of accepted standards, it is also necessary that the large ones shall not be excessively large, and the small ones not more numerous than those of the average of received standards. The color of the skin is much a matter of fashion. When the Early Rose first came before the public, many prominent dealers said it would not be accepted, as the public wanted a white-skinned potato, after the style of the Orono. Now I have a letter of inquiry for a potato equally good as a white variety, cultivated by an extensive grower, but with a change of the color of the skin to red, as the Early Rose has trained the public to red as the standard of color. Of the eyes, an unusual number, and especially an unusual depth, is undesirable, from the greater difficulty and greater waste to the housewife when peeling for the table. The color of the flesh should be the most snowy white, except it may be when designed for a Southern market, where I understand the general preference is for a yellowish fleshed potato of a waxy structure.

Hollowness at the centre, except in overgrown specimens, should be a fatal fact. Good keeping properties demand that they should not acquire bitterness with age, the capacity to keep free from sprouting, other conditions being equal, turning, as far as my experience goes, on the earliness or lateness of the variety. Of the distribution of the potatoes in the hill, compactness is desirable, as the labor of digging is much lessened, and also the liability to cut the tubers. This compactness of the Early Rose, lying in a mass as in a pocket, is an excellent characteristic, while with the Shaker Fancy it is an

illustration of an erratic distribution. Of the habit of growth of the vine, the short jointed, compact growth of which the Excelsior is a good illustration, is desirable, as such a habit admits of greater ease in the cultivation of the crop.

While these are the desirable qualities in every new seedling which applies to be admitted as a standard, and while many of these characteristics are absolutely essential, yet were a variety presented that excelled to a remarkable degree in the leading points of a good potato, the public would be ready to waive many minor points in its favor.

The late Mr. Goodrich, who had a far larger experience in producing new seedlings than any other man in the United States, gave, as the result of his observation, that a seedling potato was liable to sport in shape until the fourth year; in other words, it did not acquire its true normal shape until the fourth year from the seed. From the great number of seedlings introduced the third year from the seed, it is to be presumed the public lack either faith or information on this point.

Having presented the characteristics of a seedling potato worthy to be admitted among the standard kinds, the question naturally arises, can experience or science help the persevering cultivator to the attainment of such a model? I think each can help somewhat. In my own experience, I have found that there is a great tendency in some varieties to repeat themselves, such, for an instance, as the Orono. And here let me put in a word of advice. It is not desirable to have a seedling follow too closely its parent, for the result is apt to create confusion and dissatisfaction with the public. It is unfortunate that that excellent variety, Early Vermont, should so closely resemble Early Rose; and for this same reason, a dozen or more seedlings of Early Rose, which I have tested the few years past, with the single exception of Early Ohio, have differed so little from their progenitor as to be practically worthless.

The procuring tubers of the native wild stock, on the pla-

teaus of Peru, and the raising of seedlings from these, has not, so far as my knowledge goes, given the satisfactory results anticipated. In Mexico, varieties of potatoes are grown which have never suffered from the rot. Should this great plague again become prevalent, this may be a good source to obtain potatoes from which to raise new seedlings.

Science suggests that the pollen of choice varieties might be crossed, and thus choice seedlings be insured; and I have known of one experiment in this direction which promises well, yet the sum of extensive experiments in this direction may be like those of the distinguished Van Mons, of Belgium, with the pear,—from many thousands of trials he secured as result but two or three high class pears; while another cultivator, among comparatively a few chance seedlings, produced more and better varieties than his distinguished co-temporary.

REPORT OF COMMITTEE ON ESSAYS.

The Committee on Essays find it rather difficult to discriminate, in some cases, between the merits of different essays and reports. Five essays were submitted for premium. Three of these did not, in the judgment of the Committee, fairly come within the range of treatises for which the Society contemplated the awarding of premiums. The essays entitled "Reflections," "Farm Homes," and "Progress in the Art of Cultivating the Soil," were all well written and creditable performances, and they all contained thoughts that would be no discredit in an annual address before the Society.

The Committee were also in some doubt regarding the award upon the Reports, several of those for which a premium was not awarded, having been well written and by no means destitute of merit in other respects.

The first premium on Essays, of $15.00, is awarded to Ansel W. Putnam, of Danvers, for the essay on the "Comparative Value of Crops as Food for Cattle."

The second premium, of $10.00, is awarded to James J. H. Gregory, of Marblehead, for the essay on "Originating New Potatoes."

The first premium, of $10.00, for Reports, is awarded to Aaron Low, of Essex, for his report on "Root Crops."

The second premium, of $8.00, is awarded to David W. Low, of Gloucester, for his report on Apples, in which he has evidently taken pains to collate testimony of value regarding this crop, the profitableness of which has been a subject of considerable discussion.

The third premium, of $6.00, was a matter of considerable doubt with the Committee, as several of the remaining reports appeared to present claims where there was no very marked preponderance of merit. But it was finally awarded to Francis H. Appleton, of West Peabody, for his report on Vegetables, which contained some practical suggestions regarding the arrangements at shows, that tend to facilitate the annual work of the Committees, thereby lessening the liability to make awards that may not in fact be just, even though made with the best intentions.

N. A. Horton, Daniel E. Safford, Charles P. Preston,—*Committee.*

E. H. PAYSON, TREASURER, IN ACCT. WITH THE ESSEX AGRICULTURAL SOC'Y.

1875.	DR.		
September.	To balance of former account		$669 02
October.	To Bank Dividends	$475 92	
	To Receipts of Exhibition in Danvers, per Report of Committee	1,051 05	—1,526 97
November.	To State Bounty	600 00	
	To State Tax refunded	244 74	
	To Donation from Gen. Sutton,	25 00	
	To amount received from new members, per Secretary's Report	294 00	
	To Donation from F. H. Appleton, Esq.	50 00	—1,213 74
1876.			
January.	To Essex R. R. coupons	21 00	
	To Dividend Gas Company, Salem	24 00	— 45 00
April.	To Bank Dividends		502 40
June.	To Rent Treadwell Farm		500 00
July.	To Dividend Salem Gas Company	18 00	
	To Essex R. R. Coupons	21 00	— 39 00
	To amount of unclaimed premiums		272 00
			$4,768 13

1875.	CR.		
September.	By amount of Premiums and Gratuities awarded by the Trustees		$2,284 00
	By expenses of Exhibition at Danvers, per Report of Committee		1,043 74
	By expense amount on Treasurer's books, as follows:		
	Exhibition	$473 13	
	Printing	541 44	
	Secretary's account	264 25	
	Library Rent, &c.	25 15	
	Farm account	13 27	—1,317 24
	By balance to new account		123 15
			$4,768 13

EDWARD H. PAYSON, Treasurer.

Salem, November, 1876.

FUNDS BELONGING TO THE SOCIETY.

	Cost.	*Market Val.*
5 shares First National Bank in Danvers	$375 00	$500 00
18 shares First National Bank in Salem	1,914 66	2,160 00
8 shares National Exchange Bank, of Salem	800 00	920 00
5 shares National Revere Bank, of Boston	585 87	560 00
16 shares Warren National Bank, of Peabody	1,595 40	2,200 00
12 shares Mercantile National Bank, of Salem	1,226 50	1,350 00
23 shares Merchants National Bank, of Salem	1,189 50	1,550 00
15 shares South Danvers National Bank, of Peabody,	1,471 25	2,250 00
42 shares Asiatic National Bank, of Salem	1,281 25	1,700 00
18 shares Salem National Bank	2,000 00	2,124 00
6 shares Salem Gas Company	687 75	600 00
3 bonds Essex Railroad	700 00	700 00
Cash on hand less $70 unexpended appropriation	53 15	53 15
	$13,880 33	$16,667 15
Funds on hand in 1875,	$14,426 20	
Loss in 1875	$545 87	

The subscribers have examined the within accounts, of the Receipts and Disbursements of the Treasurer; also his statement of the Funds belonging to the Society, (showing a balance of cash in his hands, of $123 15) and find the same well vouched and correct.

CHARLES KIMBALL,
WILLIAM D. NORTHEND, } Auditors.

SALEM, Nov. 25, 1876.

OFFICERS OF THE SOCIETY,

FOR 1876-77.

PRESIDENT.

BENJAMIN P. WARE, of Marblehead.

VICE PRESIDENTS.

GEORGE B. LORING, of Salem.
PAUL T. WINKLEY, of Newburyport.
WARREN ORDWAY, of Bradford.
JAS. J. H. GREGORY, of Marblehead.

SECRETARY.

CHARLES P. PRESTON, of Danvers.

TREASURER.

EDWARD H. PAYSON, of Salem.

HONORARY TRUSTEES.

JOSEPH HOW, of Methuen.
ALLEN W. DODGE, of Hamilton.
WILLIAM SUTTON, of Ipswich.

TRUSTEES.

Jos. Akerman, Newburyport; Milon S. Jenkins, N. Andover;
Charles C. Blunt, Andover; James P. King, Peabody;
Jas. H. Cheever, Manchester; Joshua N. Kent, Newbury;
George Cogswell, Bradford; Oliver P. Killam, Boxford;
Caleb Childs, Marblehead; Aaron Low, Essex;
Thomas J. Clark, Salisbury; Nath'l E. Ladd, Groveland;
George A. Dodge, Wenham; Jarvis Lamson, Hamilton;
John Danforth, Lynnfield; James R. Nichols, Haverhill;
Henry W. Foster, Beverly; Sherman Nelson, Georgetown;
Alonzo B. Fellows, Ipswich; C. K. Ordway, W. Newbury;
James Flint, Middleton; Francis P. Putnam, Danvers;
Ariel H. Gould, Topsfield; Wm. H. Patch, Rockport;
Bennett Griffin, Gloucester; Moses P. Payson, Rowley;
A. E. Goodwin, Merrimack; Geo. W. Russell, Lawrence;
Joseph S. Howe, Methuen; John L. Shorey, Lynn;
Samuel Hawkes, Saugus; Geo. W. Simmons, Nahant;
B. F. Huntington, Amesbury; Horace C. Ware, Salem.

NEW MEMBERS—1875-'76.

Aug. T. Billings, Topsfield; James Lawrie, Danvers;
Walter F. Blake, Peabody; Mrs. Lefavor, Danvers;
W. H. Brown, Peabody; Gyles Merrill, Haverhill;
Ira F. Burnham, Essex; Ansel W. Putnam, Danvers;
O. B. Burnham, Beverly; H. H. Pillsbury, Danvers;
Joshua H. Chandler, Andover; J. F. Pendergast, Salisbury;
Wm. F. Dole, Peabody; E. P. Richardson, Lawrence;
John Grout, Danvers; Jacob E. Spring, Danvers;
B. C. Hathaway, Danvers; H. P. Whipple, Danvers;
C. F. Johnson, N. Andover; F. A. Wilkins, Danvers.
Patrick Kirby, Danvers;

☞ Any citizen in the County may become a member by paying the sum of three dollars to increase the permanent funds of the Society, and he will receive a certificate of his membership from the Secretary. No fines or assessments are ever imposed. Members are entitled to the free use of the Library, and a copy of the Transactions each year. All ordained Ministers of the Gospel residing in the County, and editors of newspapers, published therein, are entitled to the privileges of the Library.

LIST OF PREMIUMS, &c.

FAT CATTLE.

Henry Gardner, Salem, first premium, $12 00

BULLS.

J. Longfellow, Newbury, Bull with five calves, first premium, $30 00
A. T. Newhall, Newburyport, Ayrshire, two years old and upwards, first premium, 12 00
George W. Russell, North Andover, Jerseys, two years old and upwards, first premium, 12 00
F. R. Appleton, Ipswich, Jerseys, under two years old, first premium, 6 00
W. A. Russell, Lawrence, Holstein, two years old and upwards, first premium, 12 00
W. A. Russell, Lawrence, Holstein, under two years old, second premium, 4 00

MILCH COWS.

Wm. A. Russell, Lawrence, *special premium*, for best milch cows of any age or breed, $25 00
George W. Russell, Lawrence, for best milch cow, first prem., 12 00
Wm. A. Russell, Lawrence, for best milch cow, second prem., 9 00
Francis R. Appleton, Ipswich, Jersey, first premium, 12 00
Charles J. Peabody, Topsfield, best butter cow, first premium, 12 00

HERD OF COWS.

George W. Russell, Lawrence, for herd, gratuity, $12 00
Charles J. Peabody, Topsfield, for herd, gratuity, 12 00

HEIFERS.

Francis R. Appleton, Ipswich, thoroughbred Jersey, under four years, milch, first premium, $12 00
Francis R. Appleton, Ipswich, thoroughbred Jersey, under four years, milch, second premium, 6 00

Wm. A. Russell, Lawrence, thoroughbred Dutch, first prem.,	12 00
F. R. Appleton, Ipswich, thoroughbred Jersey, one year old and upward, never calved, first premium,	6 00
Frank W. Bly, Danvers, thoroughbred Jersey, one year old and upwards, never calved, second premium,	4 00
Wm. A. Russell, Lawrence, thoroughbred Dutch, first prem,,	6 00
Wm. A. Russell, Lawrence, thoroughbred Dutch, second prem.,	4 00
J. S. Ives, Salem, thoroughbred Ayrshire Calves, first prem.,	5 00
G. W. Russell, Lawrence, " Jersey Calves, first prem.,	5 00
Francis R. Appleton, Ipswich, thoroughbred Jersey Calves, second premium,	3 00
Wm. A. Russell, Lawrence, thoroughbred Dutch Calves, first premium,	5 00
Mrs. T. P. Pingree, Salem, thoroughbred Dutch Calves, second premium,	3 00
C. Gaffney, Danvers, grade under four years, (milch,) first premium,	12 00
S. F. Crossman, Swampscott, grade under four years, (milch,) second premium,	6 00
Martin Root, Newbury, grade heifers, never calved, one year old and upwards, first premium,	6 00
Charles Ham, Danvers, grade heifers, never calved, one year old and upwards, second premium,	4 00
J. Longfellow, Newbury, calves under one year old, first prem.,	5 00
S. F. Crossman, Swampscott, calves under one year old, second premium,	3 00

WORKING OXEN.

J. J. H. Gregory, Marblehead, first premium,	$15 00
Charles P. Preston, Danvers, second premium,	12 00
R. S. Bray, Newbury, third premium,	10 00

WORKING STEERS.

D. C. Hathaway, Danvers, first premium,	$10 00

TOWN TEAM.

Danvers Horse Team, first premium,	$30 00

STEERS.

George F. Mason, Andover, first premium,	$8 00

STALLIONS.

H. E. Holt, Bradford, four years old, first premium,	$18 00
C. F. Pendergast, Salisbury, second premium,	12 00
William A. Keleher, Lawrence, third premium	10 00
John Hathaway, Salem, three years old, first premium,	10 00
J. P. L. Westcott, Newburyport, second premium,	6 00

BREEDING MARES.

Franklin Alley, Marblehead, first premium,	18 00
William S. Messervy, Salem, second premium,	12 00
A. Knowlton, Essex, third premium,	10 00

FAMILY HORSES.

Charles H. Gould, Danvers, first premium,	$18 00
E. W. Jacobs, Peabody, second premium,	12 00
John Hathaway, Salem, third premium,	10 00
John Swinerton, Danvers, gratuity,	5 00

FARM AND DRAFT HORSES.

Joshua Roberts, Gloucester, first premium,	$15 00
A. T. Newhall, Newburyport, second premium,	12 00
P. T. Winkley, Newburyport, third premium,	10 00
David Knowlton, Essex, fourth premium,	6 00

PAIRS OF DRAFT HORSES.

Perry Knowlton, Essex, first premium,	$15 00
Burnham Brothers, Beverly, second premium,	10 00

COLTS—FIRST CLASS.

J. Grout, Danvers, four year old colt, first premium,	$12 00
A. Knowlton, Essex, second premium,	8 00
J. H. Fitz, Topsfield, third premium,	5 00
J. F. Dane, Hamilton, three year old, first premium,	10 00
A. T. Newhall, Newburyport, second premium,	5 00

COLTS—SECOND CLASS.

George Gibney, Salem, two year old colt, first premium,	$8 00
Wm. Groves, two year old colt, second premium,	3 00
Hugh McGlue, Newbury, yearling first premium,	8 00
George B. Martin, Danvers, yearling, second premium,	3 00

SWINE.

R. G. Buxton, Peabody, large bone Yorkshire Boar, 1st prem.,	$10 00
A. T. Billings, Topsfield, " Chester " 2d prem.,	6 00
A. T. Billings, Topsfield, small bone Essex Boar, first prem.,	10 00
F. A. Wilkins, Danvers, large bone Sow, first premium,	10 00
C. F. Goodrich, Peabody, " " " second premium,	6 00
Patrick Kirby, Danvers, small bone Sow, first premium,	10 00
Mrs. Elizabeth Saunders, Peabody, small bone Sow, 2d prem.,	6 00
P. L. Day, Bradford, Weaned Pigs, first premium,	6 00
Daniel Carlton, North Andover, Weaned Pigs, second prem.,	4 00

SHEEP.

Francis R. Appleton, Ipswich, flock, first premium,	$10 00
E. W. Jacobs, Peabody, flock, second premium,	6 00
Francis R. Appleton, Ipswich, buck, first premium,	8 00
Francis R. Appleton, Ipswich, lambs, first premium,	4 00

PLOUGHING—DOUBLE TEAMS.

R. S. Jaques and R. S. Bray, Newbury, first premium,	$12 00
D. C. Hathaway, Danvers, second premium,	10 00

PLOUGHING—SINGLE TEAMS.

Charles P. Preston, Danvers, first premium,	$10 00
Asa T. Newhall, Newburyport, second premium,	7 00
J. J. H. Gregory, Marblehead, third premium,	5 00

PLOUGHING—WITH HORSES.

Edward P. Perley, Danvers, first premium,	$12 00
Asa T. Newhall, Newburyport, second premium,	10 00
J. Kavanagh, Wenham, third premium,	8 00
G. N. Ordway and M. H. Poore, West Newbury, 4th prem.,	6 00
R. S. Bray, Newbury, fifth premium,	5 00

PLOUGHING—SWIVEL PLOUGH.

Silvester Dane, Hamilton, first premium,	$12 00
D. C. Hathaway, Danvers, second premium,	10 00

BOYS' PLOUGHING—SUTTON PREMIUMS.

Aaron Winslow, Swampscott, first premium,	$25 00
Charles S. Smith, Hamilton, second premium,	15 00
Daniel Young, Newbury, third premium,	10 00

AGRICULTURAL IMPLEMENTS.

Whittemore Bros., Boston, best collection, prem. and diploma,		$15 00
S. F. Ayers, Boxford, Ox Yoke,	"	3 00
Whittemore Bros., Boston, Hay and Straw Cutter, premium,		3 00
E. E. Lummus & Co., Boston, Randall Harrow,	"	3 00
Whittemore Bros., Boston, Smith's Churn, gratuity,		3 00
Parker & Gannett, Boston, Hay Cutter,	"	1 00
Whittemore Bros., Boston, Cucumber Pump,	"	3 00
Parker & Gannett, Boston, collection,	"	2 00

CARRIAGES.

Dole & Osgood, Peabody, Buggy and Wagon, premium,	$15 00
H. P. Whipple, Beverly, Express Wagon, gratuity,	8 00
H. H. Dempsey, Wenham,	5 00
W. B. Peart, Danvers,	5 00
H. H. Pillsbury, Danvers, display of Carriages,	5 00
C. W. Brine, Peabody, Express Wagon,	2 00

BUTTER.

W. H. Allen, Manchester, first premium,	$10 00
Mrs. L. Lefavour, Danvers, second premium,	8 00
Mrs. Farnham Stiles, Middleton, third premium,	6 00
G. W. Russell, No. Andover, fourth premium,	4 00

FARMS.

Rufus Gordon, Haverhill, second premium,	$20 00

RECLAIMED MEADOW.

J. J. H. Gregory, Marblehead, first premium,	$15 00

IMPROVED PASTURE LAND.

Joseph Horton, Ipswich, first premium,	$15 00

ROOT CROPS.

Hiram A. Stiles, Middleton, Summer Turnips,	first premium,		$10 00
Daniel Carlton, No. Andover, Onions,	"	"	10 00
Hayden A. Merrill, Beverly, Squashes,	"	"	10 00
" " " Fottler's Cabbage,	"	"	10 00
Francis R. Appleton, Ipswich, Ruta Bagas,	"	"	10 00
" " " Mangolds,	"	"	10 00

SMALL FRUITS.

Benj. F. Huntington, Amesbury, Strawberry crop, first prem., $10 00

ESSAYS.

Ansel W. Putnam, Danvers, Essay on "Comparative Value of Crops as Food for Cattle," first premium, $15 00

J. J. H. Gregory, Marblehead, Essay on Potatoes, second premium, $10 00

REPORTS OF COMMITTEES.

Aaron Low, Essex, Root Crops, first premium,		$10 00
David W. Low, Gloucester, Apples, second premium,		8 00
Francis H. Appleton, Peabody, Vegetables, third premium,		6 00
Awarded by Committee on Poultry,		$71 00
" "	Vegetables and Seeds,	145 00
" "	Fruits,	348 00
" "	Flowers,	62 00
" "	Counterpanes, Rugs, &c.,	37 00
" "	General Merchandise,	11 00
" "	Bread and Honey,	20 00
" "	Articles Manufac'd from Leather,	18 00
" "	Fancy Work, &c.,	39 50
" "	Children's Work,	14 25
		$1,925 75

RECAPITULATION.

FARMS.

Amount awarded to Ploughing,		$149 00	
" "	Farms,	20 00	
" "	Reclaimed Meadow,	15 00	
" "	Reclaimed Pasture,	15 00	$199 00

FARM STOCK.

Amount awarded to Fat Cattle,		$12 00	
" "	Bulls,	76 00	
" "	Milch Cows,	70 00	
" "	Herd of Milch Cows,	24 00	
Amounts carrried forward,		$182 00	$199 00

CONTENTS.

	PAGE.
Address of Cyrus M. Tracy,	3
The Exhibition,	21
Report on Fat Cattle,	23
" Bulls,	23
" Milch Cows,	24
" Herd of Milch Cows,	26
" Heifers,	31
" Working Oxen,	32
" Working Steers,	32
" Steers,	32, 38
" Stallions,	32
" Brood Mares,	33
" Family Horses,	34
" Farm and Draft Horses,	34
" Pairs of Draft Horses,	34
" Colts,	34
" Swine,	35
" Sheep,	36
" Poultry,	37
" Ploughing,	39
" Agricultural Implements,	41
" Carriages,	41
" Dairy,	42
" Butter,	42
" Bread and Honey,	42
" Pears,	43
" Apples, (including Statements,)	44–73
" Peaches, Grapes and Assorted Fruits,	73
" Flowers,	75
" Vegetables,	79
" Counterpanes, Carpetings and Rugs,	84

Report on Leather, ... 85
" Manufactures and General Merchandise, . . 86
" Fancy Work and Works of Art, . . . 86
" Children's Work, ... 87
" Farms, ... 88
" Improved Meadow Land, ... 90
" Improving Pasture and Waste Land, . . 95
" Manures, ... 102
" Root Crops, ... 104
" Strawberry Crops, ... 117
" Treadwell Farm, ... 119
Essay by Ansel W. Putnam, on "Comparative Value of Crops as Food for Cattle," 121
Essay by J. J. H. Gregory, on Originating New Potatoes, . 130
Report of Committee on Essays, ... 136
Treasurer's Report, ... 138
Officers and New Members, ... 140
List of Premiums, ... 143
Constitution of the Essex Agricultural Society, . . 150
Library, ... 154

TRANSACTIONS

OF THE

ESSEX AGRICULTURAL SOCIETY

IN MASSACHUSETTS,

FOR THE YEAR 1877,

WITH THE

FIFTY-FIFTH

ANNUAL ADDRESS

BY OLIVER S. BUTLER.

Published by Order of the Society.

SALEM, MASS.:
PRESS OF THE ESSEX COUNTY MERCURY.
1877.

ADDRESS.

Mr. President, and Members of the Essex Agricultural Society, Ladies and Gentlemen:

It is a matter of the most interesting nature, calculated to call forth our most sincere congratulations, that we come up to our annual festival covered and crowned with so many blessings, which the good and gracious God of the seasons has been pleased to vouchsafe unto us.

We have come, in most instances, from homes of *peace*, and *plenty*, from fruitful fields and meadows, rich with corn and crops of various kinds in great abundance. We have come from our *flocks* and *herds*, bearing it may be upon our persons the invigorating breath of our healthful companions, mingled with the aroma of new mown hay and the fragrance of the wild flowers upon which our careless feet have trodden. We have come from the scenes of our *toil* and our triumphs, where we have learned many a valuable lesson, both in *success* and defeat. From the earth that received the seed into her generous soil and returned it back to us increased a thousand fold, and from our helpers in our work, in the *house*, in the *stalls*, and on the *farm*, lessons of *faith* and *trust*, of *hope* and *courage*, of *patience* and *perseverance*, even from the

sturdy ox, that bends his willing neck to take the yoke, as well as from the subtle forces and elements that have arrested our attention and challenged our progress; and there is abundant cause for thankfulness to the bountiful giver of all good, that we can meet together at this beautiful season of the year, under this autumnal sky, and surrounded by such auspicious circumstances, to greet each other with such cordiality and friendship. For more than the display of our flocks and herds, or of our fruits and flowers, and more even, than the display of the products of genius, or the mechanism of man or maiden, more, and better than all of these, is the meeting and the joyous greeting of old friends. It is this that gives to our society more than half of its power. As the old Romans looked forward to the return of their harvest festival with supreme delight, so we of old Essex look forward to our annual feast, through all the swift flying days of the year, not as the old Romans, to offer sacrifices to their idol gods, but to meet together as fellow-workers, in a common calling, to give and to receive the congratulations of our friends, and to examine and admire the works of God and man, to look into the faces that have browned under the summer sun, and brightened under the harvest moon, and if we do not fill our halls with idol gods, we do what is better, for we bring with us our sons and our daughters, our wives and our mothers; and this feature of our feast is all the more enjoyable when we reflect on the fact, that we bring together the best minds and the best hearts, the best men and the best women, of Essex County.

In the midst of our congratulation, with some of us at least, our hearts like muffled drums are beating, as we think of those who have fallen in death the past year; for the fatal

reaper has been busy among our chief men, and an unusually large number of our most honored and honorable members have passed away. There was Edward H. Little, of Newbury, George W. Boynton, of Georgetown, Samuel Moody, of West Newbury, Thomas J. Clark, of Salisbury, Moses P. Payson, of Rowley, Thomas E. Payson, formerly of Rowley, Andrew Dodge, of Hamilton, Henry A. King, of Peabody, all of them good men and true. *Peace* to their *ashes*, and all *honor* to their *memory*.

In addressing you to-day, I am somewhat perplexed in making choice of a subject for your consideration. Not that the range of thought is at all limited, but more because it is spacious; and my perplexity is increased as I contemplate the long list of honored personages who have discoursed to you upon almost every subject connected with your high vocation. "Surely what shall the man do that comes after the King's?" As I looked abroad over the varied list of subjects, several of them have invited my attention. The soil we till has not been exhausted yet! The crops we cultivate are so numerous and varied in their nature and their adaptation to soil and climate, as well as the means of transporting them to market, that we might spend an hour profitably in their consideration. The cattle that graze in our pastures, or stand in our stalls, present a most interesting subject, and as I was thinking of these, my old familiar friend, the family Horse, called my attention to his condition and wants, and asked me to speak in his behalf, or at least to ask this venerable Society why it is that the ungainly Ox is allowed to pull and back the heaviest load possible, to the great admiration of his owner, and the winning of the first premiums? And why the draft Horse is allowed and encouraged to lift at the cart or the

Plough until the stars fly from his eyes and the splints and spavins from his limbs? Why this favoritism for these, while the family roadster must be kept circumscribed as to speed, so that if he desires to go faster than five miles an hour, he must go to the great New England Fair? And he wishes to know how it is, that the wise men who control and applaud the great Moral Show, come here and boast of the fact that this Essex Fair has not been ruined by Horse Racing? But I told my old friend that I could not ask such practical questions in such an august presence, and of course I shall not, but there is one character that rises up before me as I contemplate the scene of our labor, that exceeds all others in importance. It is the man, it is the farmer himself. The man who selects the land and the seed, the stock that he improves, and so plans and works as to win success out of apparent defeat. And as the man is more than lands, however rich, or seed however prolific, or stock however improved; you will permit me to call your attention for a few moments, to the successful farmer, and in calling your attention to some of the characteristics of a successful farmer, you will allow me to qualify my remarks by saying, that I do not mean, by the term successful farmer, the man who enters this pursuit with a fortune in his hand that has been obtained in other callings, and is now rated as a fancy farmer; nor do I refer to the man who may take to the farm as a means of restoring enfeebled health; neither do I refer to the man, who, after failing in every other pursuit, falls back upon the exhausted acres of his ancestors as a last resort to maintain a cheap aristocracy, or to find a decent burial; but I do refer to the man who obtains his first acre by his own efforts, and then adds to them as he has need, and improves them too.

The man that makes farming his business; his first and last business!

This character becomes of some importance when we remember that the question of success in farming, as to whether farming is profitable or unprofitable, depends entirely upon the man and not upon the business or its accidents, for it is true of agricultural pursuits, as it is of all others, that the right man in the right place is a success always and ever, for in God's great plan of this our universe and all that pertains to it, there is a place for everything, and a thing for every place. Every drop of water that trembles in the sunlight, every grain of sand on the seashore, every atom in the universe, has its place or sphere in which to move, and the success or failure of any agent or thing, depends upon its being and moving in its proper orbit or place. Most of the failures that occur in this our world, are the result of the violation of this law of creation, either from ignorance of their true position in society, or an unwillingness to take the place where God intended they should move. This is pre-eminently true of the professions so called, and, sometimes, painfully true.

Take the Medical Fraternity, and how apparent is this fact. Not one in a thousand of them has any real genuine skill in detecting or describing the ailments of our bodies, or in curing them, either. Not one in a thousand of them that has any natural fitness or adaptation for their difficult and responsible work, or any real love for the beautiful science they attempt to practise. Hence quacks increase and diseases multiply in an exact ratio to the increase of these second rate practitioners.

The same is true of the Legal profession. At the present time the rapid increase in the number of law students and law practitioners, is truly alarming. But we are somewhat relieved of the fear of any serious consequences when we reflect that not one in a thousand will ever make a decision that will go down to posterity as the basis of law. The trouble is found in the fact that there are too many limbs of the law for the parent stock.

The Sacred calling or profession furnishes no exception to this rule. We have started out from the wrong premise when we have acted as though we thought the morals or the salvation of our communities depended more upon the number of our religious societies and teachers, than upon their character or quality. Consequently we have built more churches than we can pay for, and crowded dwarfs into their pulpits who do well enough in reading their little essays and in taking up the usual collections, but have no conception of the nature of their calling, or adaptation to the work of visiting the sick, of comforting the mourner, or of instructing the people in the awful science of life and death, and fail entirely in lifting the soul-life Godward from the low plane of worldly thought and feeling, up into the purer and holier atmosphere of the Heavenly. The remark holds good, that there are many men in the pulpit that ought to be in the pews, and so *vice versa*.

Now it does not follow of necessity, that either of these characters are intentionally out of their place, or wickedly pursuing a calling for which they have no fitness; but still the fact remains, that they fail of success because they have failed to find the proper orbit in which God intended they should move, and on this pivot turns the failure or the success in farming. The principal factor in this difficult problem is the

man. We remark, the successful farmer is one who chooses his vocation for love of it, and comes to it with just and proper conceptions of its nature and duties, and in pursuing it is not disappointed.

If a man really hates or detests his business, and pursues it from necessity, he ought not to expect to succeed; and his failure ought not to be attributed to the nature of his business, but to the nature of the *man*. Of course this rule enforced would exclude all that horde of adventurers, now denominated farmers, including the men of whom I have spoken. He must not only come to his calling with a love for the same, but with just and proper conceptions of its nature and duties. If a man enters upon any business with wrong conceptions, or improper notions in regard to its nature, or the duties required, he will be sure to fail of success. First they will be disappointed, and then comes discontent, and then defeat and failure; and many a farmer has failed of success in his chosen calling, from this very cause. I have known many a young man, who, having read our agricultural literature, or perhaps listened to our after-dinner speeches at our fairs, have come to entertain a sort of rose-colored view of agriculture, and having chosen farming for their business, have been undeceived, when it was too late to retrieve their steps. Perhaps they did not really think that the corn would grow without planting; or that the cows would come up into the parlor and ask to be milked; or that the hens would lay three eggs a day in the dairy-maid's lap. But then they had no adequate conceptions of the skill required, and the labor to be performed, in order to force from the reluctant soil the richest treasures, and to wring from apparent defeat the assured success for which they have toiled. The

successful farmer, then, is one that brings to his calling an ardent love for the same, and the most just conception of its nature and its duties. And he must also possess a sound, healthy, physical system; we regard this qualification as indispensable. While we freely admit that the *invalid* may regain his health, by gentle, moderate exercise among the healthful scenes of farm life, and that the *imbecile* may not starve on the farm so long as his inherited acres remain to him, and that the *gentleman* farmer may do much to improve his lands, and his stock, as well as for the development of new methods of culture, in which all his brethren may share, without putting his own hands to the plough or the hoe,—and that it shows both goodness of heart, and wisdom of the mind, when the aged and the infirm retire among the scenes and the associations of their youth, to spend the evening of their days in peace, and the happy reflections that come from a well-spent life,—still we must insist that the man who must expose himself to the elements, and brave the storms of winter, and bear the heat of summer; the man who must guide his plough with his own hands, and pitch his new mown hay over the great beams without a patent fork; the man who must build his own walls, and ditch his own meadows,—will need to have a strong, healthy body, *well developed*, *well trained*, and under *perfect control*. He needs, and must have, a physical system that does not need any of your bitter drugs to give a relish for its food, or a cathartic to work it off, or powerful opiates to bring sleep to his eyelids. The successful farmer not only needs a healthy, vigorous body, but a sound, well-balanced mind, with the broadest culture. Away, forever away, with the notion that any ignoramus will do well enough for a farmer, or that farming is to be prosecuted sim-

ply by *main strength* and *stupidness*. Oh, no. Such is the nature of your calling, that it requires the broadest culture and the most varied acquirements.

In almost every other vocation, the man of *one idea* may succeed, but not so with farming. Why, think for a moment of the elements, the forces, the properties, the influences, the laws, developed and undeveloped, that he must come in contact with, and understand, if he would succeed. Take the young farmer out on to his broad acres, and let him look beneath his feet, and contemplate the soil out of which he is to draw his treasures, and ask him to make that his study, until he understands its component parts, its marvellous mysteries, its various needs and adaptation to the different crops he may wish to cultivate, and how long would it take him? Then let him attempt to enumerate and analyze, and annihilate, if he can, all the countless horde of insects, and vermin, and reptiles, with their modes of life and propagation, that lie in ambush, waiting to devour the precious seed as soon as it falls from his open hand. Then let him attempt to analyze the influence of light and heat, of wet and dry, upon his varied crops. Then let him look into his barnyard or stalls and watch his growing herds; let him attempt to become familiar with the different breeds of cattle, the best adapted to his *climate* and *business*, with the best methods of treatment, and feeding, that will give him the best results. Then let him look above into the Heavens o'erhead, and what mysteries meet his gaze and invite his investigation! From the shifting clouds, the varying winds, and the mellow sunset tints, to the storms and tornadoes that devastate his fields and blast his hopes. How endless the variety of subjects that meet him on every side and challenge his investigation. The suc-

cessful farmer an *ignoramus! Impossible! Impossible!* But in order to the most varied and thorough cultivation of the man, or the successful investigation of these varied subjects, he must become familiar with the agricultural literature of his times; and, if possible, of all times; for a farmer without an agricultural library would be like a hoe without a handle, or a rake without a tooth. But the successful farmer must be more than a reader of books; he must do more than take the products of other minds and experiments, and use them without knowing why! He must be a thoughtful man, a progressive man. Now the difference between the automatic reader of books and the thoughtful man is as wide as from the centre to the poles. The unthinking man is like the bucket that goes to the well to be filled with water, or the sack that goes to the mill to be filled with grain. The water that fills the bucket, or the grain that fills the sack, cannot do either vessel any good, it may do them much harm by over-filling, or filling beyond their capacity. *This filling process is all too common!* There are too many empty buckets and sacks on our farms to-day, and they are found everywhere, even in our churches and lecture rooms. Empty heads waiting to be filled.

The thoughtful man is altogether a different person. He finds a subject for his thoughts, and a lesson for his learning, in everything around him. The thoughtful farmer never takes the tiny seed into his hand without studying the law of germination, of development, and death. He never takes hold of the handles of his plough, without studying the form and structure of the machine, and how it might be improved, so as to leave his furrow straight and smooth, and if he is very thoughtful, he goes down below the furrow of his plough, and

studies geology and mechanism at the same time. He not only looks into books and reads them well, but he makes books for others to read. He not only consults authors and compares their different theories, but he becomes an author himself, and constructs theories for others to follow. He not only reads history, but he makes history. He not only familiarizes himself with the deductions of science, but he *develops*, and *elaborates*, and *utilizes* science, and makes it contribute to his success as a farmer.

Another necessary element of success in the character of the farmer, is a well balanced and well developed moral nature. For no man can be truly honest who has not a well developed moral nature. And honesty or integrity of character is the basis of all greatness or goodness in any individual. But such is the condition of the farmer's life, and such are the natures of the elements and properties with which he constantly comes in contact, that all tricks, all deceptions, all sham and duplicity, should be forever banished from the farm. This is all the more needful for the farmer, in order to strengthen his faith and confidence in the God of the seasons, against the time of trial. There comes to every man, and every family, a time of trial and disappointment, when the mind is bewildered, and the heart grows faint, and hope dies out, and comes not back with the morning light. But there are trials and disappointments that are peculiar to the tiller of the soil; for, after he has selected the seed with the greatest care, and planted it in the most congenial soil, and cultivated the growing crops with the greatest care and persistency, and when every indication would seem to warrant a large, and even bountiful harvest, and he begins to count his gains as sure, then comes the drought of summer, and he

waits for the coming rain, but it comes not. The earth is parched and dry beneath his feet. The Heavens above him are red with their brazen heat, and the disheartened farmer must look on his withering and wasting crops, as helpless as the shipwrecked mariner, floating on at the mercy of the great deep sea. For to make an effort of resistance is to cope with the *Infinite* forces of nature. But suppose a remnant of what gave so much promise a short time since, is left him; and he begins to hope that something after all will be left him; then come the swarming insects and the countless hordes of vermin that crawl at his feet, or fly in the air, and after these have taken their share of the precious fruits, there is but little left for the early frost, that leaves our corn fields as black and as barren as the plains of the Nile, when the overflowing tides refuse to come. But suppose this picture to be a little overdrawn. Suppose the harvest redeems the promise of the spring time and the summer, and the root crops groan and grow, and the corn fields laugh in the sunlight, and the trees are loaded with their golden fruit; the granaries are full, the barns can hold no more, the storehouses burst forth with their rich treasures. Then he is told that the markets are full, and that there is no sale for his products, at a remunerative price, and he knows not whether to pray to be delivered from his friends or his enemies. Now the farmer standing in the presence of such defeat, and sometimes disaster, as this, needs a well cultivated moral nature, that will produce in him a faith and confidence in God, the Creator and the Ruler of this universe, to whose infinite mind all these mysteries of nature are as apparent as the daylight, and under whose control all the elements move in their order, and who has sworn by himself that seed-time and harvest,

Summer and Winter, shall not fail. With such a sublime faith as this in the God of the universe, the husbandman goes forth to his labor again, in the returning spring-time. He sows in faith, he cultivates in faith, and gathers in the precious fruits of his toil with rejoicing. Then let every man be true.

> "To thine own self be true,
> And it must follow,
> As the night the day,
> Thou canst not then be false to any man."

And now, Mr. President, if the question should be asked you: does farming pay? or is farming as profitable as other business? then give the same answers you would with reference to any other business or prefession, (for it is just as pertinent to any other business as to this,) and if the question comes to you, answer it by saying yes, when the right man is found in the right place. Farming is a failure only when the wrong man is in the right man's place; and it is more truly the case with reference to farming than it is to any other branch of business. If the business man, as he is called, fails, from losses by fire or flood, his losses are usually made up by insurance companies; or if his losses come from other causes, then he repudiates his obligations by taking advantage of the bankrupt laws. But the honest soil we till has never yet issued an insurance policy for special cases; and as special legislation is as yet unknown in the legislative halls of the material universe, bankrupt laws are as yet unknown. If the lawyer loses his rich client, by his failure to defeat the ends of justice, and clear his client from the penalties of the law, he need not despair, for the "fools are not all dead," and the very next day he may find a client who is willing to spend a fortune to gain a dollar. But if the harvest time comes and

finds you with an empty corn crib, dame Nature sends you no new client to enrich your store, until the frosts and snows of winter have come and gone, when you may again try your hand at the plough and the hoe. If the clergyman seems for a time to fail of success in his chosen calling, he need not despair, (and usually does not,) for back of him is the dignity of his sacred calling. The associations with which he is now or has been connected, the college, the seminary, the conference, (all of them a kind of mutual admiration society,) then there is the religious press, for which he has solicited subscriptions, the missionary society, for whose treasury he has taken the annual collections. Then last, but not least, the ladies' sewing society, which very often is more powerful than all the others combined. With all of these at his back, how can he fail? But the farmer has none of these powerful institutions or agencies to aid him in his work, but, crops or no crops, he must contribute to sustain them all. The physician may sometimes seem to fail of all that success which his qualifications would seem to warrant, because of the healthfulness of his patients. But he has only to wait for the changing of the seasons, when his rejoicing eyes shall see his patients sickening and dying to replenish his depleted treasury. But the old earth needs feeding and feasting, not purging and depleting. In the chemistry of the natural elements there is no partiality shown for allopathy or for homœopathy, they as yet not having made a record of the doings of the Massachusetts Medical Society.

Hence it must be seen that in order to the most successful cultivation of the soil, the breeding and developing of cattle, and bringing them to a profitable market, the right man must be found in the right place.

Then we come back to our first statement, that the man is more than his accidents, even in farming; and although

> "It may not be our lot to wield
> The sickle in the ripened field,
> Nor ours to hear on summer eves
> The reaper's song among the sheaves;
> Yet, when our duty's task is wrought
> In unison with God's great thought,
> The past and future blend in one,
> And whatsoe'er is willed is done."

And now, Mr. President and members of the Essex Agricultural Society, thanking you for the courtesy of your invitation to address you at this time, and for the attention you have given to my feeble utterances, you will allow me to express the hope that at some future time we may be permitted to listen to a description, not of the successful farmer, but of the next most important character on the farm, (or in the house,) the successful farmer's wife.

THE EXHIBITION.

The Cattle Show and Exhibition was held at Lawrence, Sept. 25th and 26th, 1877.

REPORTS OF COMMITTEES, &c.

FAT CATTLE.

The Committee on Fat Cattle have attended to their duty and report that but one pair was entered, and that by Wm. Peters of North Andover, and they award to him the first premium of $12.

The Chairman of the Committee being absent, the duty of making out the report fell on one poorly qualified for that duty; but we would say, that where we see so many oxen around our show, in the town teams, and ploughing teams, worthy of a premium for fat cattle, we regret that the owners of them do not enter them as such.

The export of beef, which will be likely to increase rather than decrease, has raised the price of beef to that point which it will be for the interest of the farmers to look after. When good beef brings from nine to ten dollars per hundred, and corn can be bought for sixty-five cents per bushel, a farmer who keeps a pair of oxen for his own comfort and convenience in doing his work, and does not work them very hard, can well afford to buy meal and give them, and in from six to twelve months have them good beef, and make a good profit on the outlay. We are of the opinion that at present prices of beef and grain, it will pay the farmers to look more to this branch of husbandry.

Committee—John P. Foster, Albert Titcomb, J. Z. Gordon.

BULLS.

Ayrshire Bulls, two years old and upwards,—the Committee award to J. D. W. French, of North Andover, for his Bull "Andover," first premium, $12.00.

George B. Bradley, of Methuen, second premium, $6.00.

Ayrshire Bulls, under two years old—Doane Cogswell, of Bradford, first premium, $6.00.

Charles Perley, of Boxford, second premium, $4.00.

For the best Bull of any breed, with five Calves of his stock not less than one year old, the premium of $30.00 is awarded to J. D. W. French, of North Andover, for his Ayrshire Bull "Fitz James."

Jersey Bulls,—Z. C. Wardwell, of Groveland, first premium, $12.00.

F. R. Appleton, of Ipswich, second premium, $6.00.

Holstein Bulls, under two years old,—W. A. Russell, of Lawrence, first premium, $6.00.

W. A. Russell, of Lawrence, second premium, $4.00.

A splendid Jersey Bull, of George W. Russell, of Lawrence, was on exhibition, but as he was awarded the first premium last year, he could not compete for the premium.

William B. Carlton, of Haverhill, offered a Durham Bull, three years old, a very handsome animal, and in the opinion of your Committee worthy of the first premium of $12.00. His pedigree, with the test of the Herd Book, is not perfect. He is a descendant of the stock of Maj. Ben. Perley Poore, of Indian Hill. The father of Major Poore introduced pure Durham cattle on his farm forty years ago; and although he has not kept his cattle registered, the Major has never allowed anything but pure blood to be infused into it. His stock is perfectly acclimated, is hardy, produces fine milkers as to quantity and quality, and in the opinion of your Committee, is quite as likely to improve the stock as a Herd Book animal is. But fearing to establish a precedent, we would not award the premium without the sanction of the Society.

Committee—Joseph Kittredge, S. E. Noyes, Nath'l. Gage.

STATEMENT OF J. D. W. FRENCH.

To the Committee on Bulls:

I enter for premium my thoroughbred Ayrshire Bull, "Andover," 1549, recorded in the "Ayrshire Record," published by the Ayrshire Breeders' Association. Calved April 18, 1875; bred by me. Dam, Lillie Douglas, 549, A. R. Sire, Fitz James, 550, A. R.

For the premium of $30, to be awarded for best thoroughbred Bull of any age or breed, with five calves of his stock, not less than one year old, I enter my Ayrshire Bull, "Fitz James," 550, A. R. Calved June 10, 1870. Dam, Jessie, 493. Sire, Tarbolton, 372, imported.

CALVES OF HIS STOCK—HEIFERS.

1. Privet, 3107, A. R. Calved May 11, 1874. Dam Primrose, 711, A. R.

2. Lizzie Burke, 3629, A. R. Calved Dec. 26, 1874. Dam, Betty Burke, 933, A. R.; imported.

3. Roxanna 4th. Calved April 12, 1876. Dam, Roxanna, 1816, A. R.

4. Mary Brand, 3662, A. R. Calved Dec. 12, 1875. Dam, Alice Brand, 833, A. R.; imported.

5. Primula, 3096, A. R. Calved May 18, 1873. Dam, Primrose, 711, A. R.

MILCH COWS.

Report of Committee upon Milch Cows:—

Ayrshires.—The Committee award to J. D. W. French, of North Andover, first premium to his Cow Betty Burke, $12. Second premium to Roxanna, $6.

To this award the Committee annex the very clear and full statement of Mr. French, as follows;—

STATEMENT OF J. D. W. FRENCH.

To the Committee on Milch Cows:

I enter for premium for thoroughbred Ayrshires, four years old and upwards, Betty Burke, 933, A. R., imported, calved

1865; and Roxanna, 1816, A. R., calved April 10, 1870, bred by me. Dam, Rose, 743, A. R. Sire, McDonald 3d, 263, A. R.

Both these Cows are recorded in the "Ayrshire Record," published by the Ayrshire Breeders' Association.

Betty Burke dropped her last calf November 12, 1876. Roxanna dropped her last calf May 27, 1877.

The milk account has been made up to Sept. 1st. Betty Burke, 270 days, product in milk, 5610 lbs.; average per day, 20.77 lbs. Roxanna, 95 days, product in milk, 2968 lbs.; average per day, 31.24 lbs.

For account of treatment, food, &c., see statement in regard to Herd of Milch Cows.

In 1875 Betty Burke gave, in 308 days, 8138 lbs. of milk, an average of 26.42 lbs. per day. In 1875 Roxanna gave, in 300 days, 7431 lbs. of milk, an average of 24.77 lbs. per day.

My feed has been very moderate, as the statement will show.

Thoroughbred Holsteins.—To W. A. Russell, of Lawrence, first premium to his Cow Lady Andover, $12. Second premium to Mabit, $6. We give his statement, as follows:—

STATEMENT OF W. A. RUSSELL.

Entered for the best Milch Cow of any age or breed, "Lady Andover," H. H. B., No. 16. She is eight years old, calved Sept. 14, 1876; is due to calve Sept. 28th, 1877. Her milk record from Oct. 1st to July 1st: October, 1562 lbs.; November, 1296 lbs.; December, 1127 lbs.; January, 1288 lbs.; February, 1024 lbs.; March, 1223 lbs.; April, 876 lbs.; May, 885 lbs.; June, 645 lbs. In 273 days she gave 9856 lbs., or 4693 1-2 quarts; average, 17 52-273 per day. Feed in winter, two quarts meal, four quarts shorts, one-third bushel roots, and good hay; has had nothing but what she got in the pasture after May 15th; milked her until Aug. 16th, but no record kept.

"Mabit," H. H. B., No. 178. She is eight years old; dropped her last calf Sept. 12th; for the past eight days she

has averaged 50 lbs. milk per day. Feed, pasture and two quarts of grain. Last season she calved in May. For the months of June and July she averaged 56 lbs., or 26 2-3 quarts per day.

J. C. Pove, Foreman for Wm. A. Russell.

Grades.—To Wm. A. Russell, of Lawrence, first premium, $12. Second premium, $6. Statement as follows :—

One Grade Cow entered by Wm. A. Russell. She is seven years old; three-fourths Holstein, one-fourth Ayrshire. Dropped her last calf July 28th. For the last ten days in August she averaged 18 quarts of milk per day. Feed, two quarts of meal and pasture.

One Grade Cow entered by Wm. A. Russell. She is seven years old; one-half Holstein and one-half native. Dropped her last calf March 27th; is due to calve April 14th, 1878. She gave 21 quarts of milk per day for the first ten days in June, and 12 quarts per day for the last ten days in August. Feed, two quarts of meal and pasture.

J. C. Pove, for Wm. A. Russell.

A special premium of $25 for the best Milch Cow of any age or breed, to Charles Perley, of West Boxford, for his Thoroughbred Ayrshire, Madge Day. We give his statement with a record of her milk for the first ten days in June, and the last ten days of August, as follows :

STATEMENT OF CHARLES PERLEY.

I enter my Ayrshire cow, Madge Day, 4038, for premium. She dropped her last calf Dec. 18th, 1876. After turning out to grass in May, she had no feed in addition to the pasture until the last of August, when the pasture became very dry, and a small foddering of corn stalks was given to her each day.

RECORD OF MILK.

June 1st,	34½ lbs.	August 21st,	18 lbs.
" 2d,	34 "	" 22d,	19 "
" 3d,	33½ "	" 23d,	18½ "
" 4th,	34 "	" 24th,	18 "
" 5th,	34¼ "	" 25th,	18 "
" 6th,	33¾ "	" 26th,	19 "
" 7th,	34 "	" 27th,	20 "
" 8th,	34½ "	" 28th,	21 "
" 9th,	33¾ "	" 29th,	21 "
" 10th,	34 "	" 30th,	21½ "
		" 31st,	22 "

There were several other entries of very fine cows, which the Committee would have been glad to have considered; but were obliged to pass them, as the owners had omitted to accompany their entries with a written statement, according to the rules of the Society. We give below for future reference the rule referred to:

"A written statement will be required of the age and breed of all Milch Cows entered, and time they dropped their last calf, and when they will next calve; the kind, quantity, and quality of their food during the season; and the weight or measure of their milk during the evening and morning of each of the first ten days of June, and the last ten days of August."

The Committee decided before entering upon their duties, to keep strictly to this rule and take no verbal statements. We need facts taken at the time and recorded, that we can print. Many cows, kept year after year to no profit, would be sent to the shambles if the owner could see an exact record of their milk.

JOHN L. SHOREY, for the Committee.

HERD OF MILCH COWS.

The Committee on Herds of Milch Cows have carefully attended to their duty, and have awarded the premiums as follows, viz.: The first premium of $18 to J. D. W. French,

of North Andover, for his herd of Ayrshires; and the second premium of $12 to George W. Russell, of Lawrence, for his herd of Jerseys.

Committee—James P. King, John Danforth, Edward R. Lee, John Swinerton, J. Otis Winkley.

STATEMENT OF J. D. W. FRENCH.

Committee on Herd of Milch Cows:

I enter for premium for best Herd of Milch Cows, my Ayrshires, Lillie Douglas, 549, Lilac Douglas, 2721, Alice Brand, 833, imported, Primula, 3096, and Jenny Burke, 2556. These animals are all recorded in the "Ayrshire Record," published by the Ayrshire Breeders' Association. The last two were bred by the exhibitor. The milk of each cow has been carefully weighed twice a day.

THE RECORD FOR 2 SUCCESSIVE YEARS, EXCEPTING PRIMULA, WHO WAS IN MILK 424 SUCCESSIVE DAYS.

Name, No. and Age.	Years.	No. Days in Milk.	No. Lbs.	Av. pr dy.
Lillie Douglas, No 549.	1875.	305	5657	18.15
Calved May 2d, 1864.	1876-77.	290	5179	17.85
Lilac Douglas, 2721.	1875-76.	330	5301	16.06
Calved April 4, 1873.	1876-77.	283	4966	17.54
Alice Brand, 833.	1876.	271	5688	20.98
Calved Jan. 27, 1870.	1875.	285	6342	22.25
Primula, 3096.	1876-77.	424	6752	15.92
Calved May 18, 1873.				
Jenny Burke, 2556.	1875-76.	258	4745	18.39
Calved Oct. 21, 1873.	1876-77.	288	4889	16.97

You will notice that Lillie Douglas is 13 yrs. old; Alice Brand 7 yrs. old; Lilac Douglas 4 yrs. old; Primula 4 yrs. old; Jenny Burke 4 yrs. old in October, 1877.

Lillie Douglas dropped a b. c. April 1st, 1875, and again a b. c. May 26, 1876-77.

Lilac Douglas dropped a b. c. March 16, 1875; a b. c. April 24, 1876.

Alice Brand dropped a c. c. Dec., 1874; a c. c. Dec. 12, 1875.

Primula dropped a b. c. Jan. 29, 1876.

Jenny Burke dropped a c. c. Nov. 7, 1875; a b. c. Sept., 1876.

RECORD SINCE DROPPING LAST CALF, TO SEPT. 1, 1877.

			No. dys. in Milk.	No. Lbs.	Av. pr. dy.
Lillie Douglas	dropped	c. c. July 4, 1877.	55	1307	23.76
Lilac Douglas	"	" Apr. 17, 1877.	126	3760	29.84
Alice Brand	"	" Nov. 22, 1876.	272	6384	23.47
Primula	"	" May 25, 1877.	97	2522	26.
Jenny Burke	"	" Aug. 24, 1877.	7	214	30.57

STATEMENT OF MANNER OF KEEPING, &C.

Summer Treatment.—From about the middle of May to November 1st, milking begins at a quarter before 5 A. M., and 6.30 P. M. The food during that time, is pasturing with a feed of fodder corn or grass during the months of August, September and October.

Winter Treatment.—From November 1st to about the middle of May, milking begins at 5 A. M. and 5 P. M. After milking in morning, each cow is given one feed of good hay; after that is eaten, 10 quarts of cut mangolds and turnips, or mangolds alone. They are then carded, cleaned and bedded. At 11 o'clock A. M. watering begins. At noon each cow receives a foddering of corn fodder or poor hay; at 4 P. M. a foddering of good hay and 2 quarts of corn meal; (the corn is generally ground with the cob.) After the evening milking, the cows are bedded, and then left for the night. The Committee will observe that my feed is not excessive; but on the other hand very moderate. My cows could be forced into giving much more milk than is shown in the record. The dry cows do not receive any grain. The amount of hay fed per day, is from 25 to 30 lbs.

STATEMENT OF GEORGE W. RUSSELL.

I offer for premium, my herd of seven cows, pure bred Jerseys. They were fed in winter with hay, and four quarts of shorts, and one peck of roots, morning and night. In summer they have been kept in a common pasture and had four quarts of shorts per day.

"Nellie Blenn, 2d," dropped bull calf October 13, 1876; due to calve August 3, 1877.

RECORD OF MILK.

October, (15 days,)	405	quarts.	Average per day,	27	qts.
November,	810	"	"	27	"
December,	790	"	"	25.484	"
January, 1877,	775	"	"	25	"
February,	651	"	"	22.45	"
March,	682	"	"	22	"
April,	600	"	"	20	"
May,	558	"	"	18	"
June,	450	"	"	15	"
July, (15 days,)	105	"	"	7	"
	5826	" in 273 days.	"	21:34	"

"Nellie Blenn," dropped calf December 14, 1876. Due to calve October 27, 1877.

RECORD OF MILK.

December, (10 days,)	205	quarts.	Average per day,	20.5	qts.
January, 1877,	581	"	"	18.74	"
February,	504	"	"	18	"
March,	503	"	"	16.23	"
April,	427½	"	"	14.25	"
May,	403	"	"	13	"
June,	360	"	"	12	"
July,	325½	"	"	10.5	"
August,	186	"	"	6	"
	3495	" in 253 days.	"	13.82	"

"Belle," dropped calf Sept. 6. 1876; due to calve August 2, 1877.

RECORD OF MILK.

October,	555	quarts.	Average per day,	17.9	qts.
November,	488	"	"	16.27	"
December,	434	"	"	14	"
January, 1877	372	"	"	12	"
February,	283	"	"	10.11	"
March,	279	"	"	9	"
April,	270	"	"	9	"
May,	248	"	"	8	"
June,	195	"	"	6.5	"
July,	155	"	"	5	"
	3279	" in 304 days.		10.79	

"Sultana," imported, dropped calf May 14, 1877. Due to calve March 25, 1878.

RECORD OF MILK.

May, (15 days)	215	quarts.	Average per day	21	quarts.
June,	600	"	"	20	"
July,	573½	"	"	18.5	"
August,	465	"	"	15	"
	1953½	" in 107 days.	"	18.26	"

"Daphne," dropped calf Feb. 25, 1877. Due to calve March 17, 1877.

RECORD OF MILK.

March,	449½	quarts.	Average per day,	14.48	quarts.
April,	390	"	"	13	"
May,	360	"	"	12	"
June,	315	"	"	10.05	"
July,	248	"	"	8	"
August,	186	"	"	6	"
	1,948½	" in 184 days.	"	10.59	"

"Daphne 2d;" dropped calf March 26, 1877; due to calve March 2, 1878.

RECORD OF MILK.

April,	607½ quarts.		Average per day,	20.25 qts.
May,	589 "		"	19 "
June,	525½ "		"	17.52 "
July,	496 "		"	16 "
August,	372 "		"	12 "
	2590 "	in 153 days.	"	16.93 "

"Rosa R.," two years old; dropped calf July 19, 1877.

RECORD OF MILK.

July, (10 days,)	92 quarts.		Average per day,	9.2 qts.
August,	248 "		"	8 "
	340 "	in 41 days.	"	8.29 "

HEIFERS.

The Committee on Heifers, in submitting their Report, would state that they found much difficulty in deciding in so satisfactory a manner as they could have desired, as to the relative merits of so large a number of entries scattered over the grounds, as they were generally of uniform excellence in quality.

The Committee make the following awards:

Thoroughbred Heifers in Milk—First premium to J. D. W. French, of North Andover, of $12.00, for his Ayrshire Heifer "Privet;" and also the second premium of $6.00 for his Ayrshire Heifer "Lizzie Burke."

Jersey Heifers in Milk—First premium to Levi Emery, of Lawrence, for Jersey Heifer, $12.00.

Second premium to George W. Russell, of Lawrence, $6.

Jersey Heifers not in Milk—First premium to Levi Emery, of Lawrence, $6.00.

Second premium to F. R. Appleton, of Ipswich, $4.00.

First premium to J. D. W. French, of North Andover, for his Ayrshire Heifer "Mary Brand," $6.00.

Second premium to Charles Perley, of Boxford, $4.00.

Native or Grade Heifers in Milk—First premium to George B. Bradley, of Methuen, $12.00. Second premium to George B. Bradley, $6.00.

Native or Grade Heifers not in Milk—First premium to Daniel Carlton, of North Andover, $6.00.

Second premium to W. B. Carlton, of Haverhill, $4.00.

Holstein Heifers—First premium to W. A. Russell, of Lawrence, $6.00.

Thoroughbred Heifer Calves—First premium to J. D. W. French, of North Andover, $5.00.

Second premium to Charles Perley, of Boxford, $3.00.

First premium to F. R. Appleton, of Ipswich, $5.00.

Second premium to George W. Russell, of Lawrence, $3.

Native or Grade Calves—First premium to W. B. Carlton, of Haverhill, $5.00.

Holstein Calves—First premium to W. A. Russell, of Lawrence, $5.00.

Committee—Hiram A. Stiles, James Nason, Abel Stickney, Daniel G. Todd, Albert Kimball.

STATEMENT OF J. D. W. FRENCH.

Committee on Heifers:

I enter for premium for thoroughbred Ayrshires, under four years, in milk, my Heifers Privet, 3107, and Lizzie Burke, 3629, both recorded in the "Ayrshire Record," published by the Ayrshire Breeders' Association.

"Privet" calved May 11, 1874. Dam, Primrose, 711; Sire, Fitz James, 550.

"Lizzie Burke" calved Dec. 26, 1874. Dam, Betty Burke, 933, imported; Sire, Fitz James, 550.

Both Heifers were bred by the exhibitor.

THE MILK RECORD.

	Year.	No. Days in Milk.	No. Lbs.	Av. pr. Day.
Privet,	1876-77	265	3750	14.15
"	1877	28	688	24.57
Lizzie Burke,	1877	175	3245	18.54

Both Heifers are still in milk.

Privet dropped a b. c. Sept. 28, 1876, and again a b. c. Aug. 3, 1877.

Lizzie Burke dropped a b. c. Feb. 23, 1877.

I enter for premium for one year old and upwards, never calved, Ayrshires, my Heifers Mary Brand and Roxanna 4th. Mary Brand, 3662, calved December 12, 1875. Dam, Alice Brand, 833, imported; Sire, Fitz James, 550.

Roxanna 4th, calved April 12, 1876. Dam, Roxanna, 1816. Sire, Fitz James, 550.

Both Heifers bred by exhibitor.

I enter for premium for Heifer Calves, Ayrshires, four Calves bred by me :—

"Sarah Brand," calved Nov. 22, 1876. Dam, Alice Brand, 833, imported; Sire, Fitz James, 550.

"Sophora Douglas," calved Jan. 5, 1877. Dam, Sophie Douglas, 2d, 3205; Sire, Fitz James, 550.

"Lilac Douglas, 2d," calved April 17, 1877. Dam, Lilac Douglas, 2721; Sire, Fitz James, 550.

"Roxanna 5th," calved May 27, 1877. Dam, Roxanna, 1816; Sire, Fitz James, 550.

WORKING OXEN, BULLS AND STEERS.

The Committee award as follows :—

To George A. Butters, Methuen, for Working Oxen, first premium, $15.

To B. H. Farnham, North Andover, second premium, $12.

To Moses A. Bailey, Andover, third premium, $10.

To George F. Mason, Andover, Working Steers, first premium, $10.

To John P. Foster, North Andover, second premium, $6.

To W. A. Russell, Lawrence, Working Bulls, first premium, $15.

Committee—Jos. Kittredge, J. M. Titcomb, Dudley Bradstreet.

TOWN TEAMS.

The Committee on Town Teams respectfully submit the following report :—

There were three town teams of horses and four of oxen entered for premium, as follows : From Lawrence, four pairs of oxen ; North Andover, eight pairs of oxen and eleven pairs of horses ; Andover, nineteen pairs of oxen and three pairs of horses ; Methuen, twelve pairs of oxen and four pairs of horses. The quality of nearly all the stock was so excellent, that it was not easy to make the award of premiums. Having regard, however, partly to number in the team, and partly to quality of the cattle, the Committee recommend the following awards :—

For Horse Teams—To North Andover, first premium of $30.00. To Methuen, second premium of $15.00.

For Ox Teams—To Andover, first premium of $30.00. To Methuen, second premium of $15.00.

We do not know as there is need of any extended remarks on Town Teams. The cattle thus collected and shown on the day of exhibition, simply contribute to the interest of the show, and also indicate the manner in which the farmers of the exhibiting town carry on their work.

A few suggestions, however, on the kind of stock best to be employed upon the farm, may not be out of place. Within a few years, a great change has taken place in the manner of doing farm work, particularly that requiring animal labor. Horses have to a great extent been substituted for oxen, and

we now find few farmers owning working oxen. This has resulted from several causes. The small profit in making beef since the supply has come mainly from the West, the greater quickness with which many kinds of work can be performed by horses, and the high price of fodder in past years, have all contributed to this result. But we have sometimes thought that farmers have gone too far in this direction, and we hold that the comparative value of horses and oxen for ordinary farm labor, is really quite an important question for every farmer.

Undoubtedly the use of horses is most economical for the performance of many kinds of work, such as ploughing "old ground," harrowing, and many kinds of teaming, but yet there are some things which can be done best by oxen. It is seldom that a horse team can turn over grass ground so well as oxen, especially if the ground be rough or stony, and generally for any kind of work requiring especial strength and steadiness, oxen are preferable. Still it is absolutely necessary for every farmer to keep a horse, and of course if he can perform all his work with it, he does not need a pair of cattle. But if his farm is large enough to require more animal labor, then it becomes a question whether he had better employ oxen or horses. There are several points to be considered in deciding this question, which will readily suggest themselves; but we will only refer to one or two. If the farmer has carts and harnesses for horses, and no equipments for oxen, he must consider whether it will pay him to go to the expense of an outfit for an ox team. If his business is such as to require a large amount of teaming on the road, he must consider whether his work cannot be done more economically by horses. But then we suppose it is the experience of almost every farmer, that when he finds it necessary to sell his horse, he cannot get as much as he gave, even if his horse has not depreciated in value. We do not think this applies particularly to farmers, but suppose it to be a general law,—with now and then an exception,—that the man

who buys a horse, does not usually get his money back when he sells. If he buys a good sound horse, the animal is subject to the ten thousand ills to which horse flesh is heir, and he is liable any day to find that by some unlucky wrench or strain, or carelessness, fifty per cent. of the value has vanished. If he makes an unlucky trade, and finds that his horse has some quality which he don't like, or is utterly wanting in the traits he most desires, he cannot easily sell, but must wait months for a customer, and then sell at a low figure. It is true it is not much easier to find a customer for a poor, thin pair of oxen, than for a horse; but we don't believe a good farmer will often have that kind of oxen. If oxen are fat enough for beef, they will always sell at the market price; so that if one buys a pair of cattle to work for a short time, he need not lose anything if the price of beef remains the same. The difference in the cost of keeping a pair of horses and a seven-foot pair of cattle for a year, is not very much. The oxen probably cost the most in the winter, and the horses in the summer. We do not advocate the use of oxen for farm work by every farmer, but we think that by proper management they can be used profitably to a greater extent than they are. And the first and principal point is to buy the right kind of cattle. It is a common notion that it is most profitable to buy thin cattle, and by good keeping get them fat, thus making a gain. We believe this is a great mistake. Our own experience is, that the most unfortunate trades we ever made were in buying that kind of stock. There is always some reason why cattle are thin, and unless we know all about them it is impossible to tell whether it is for want of good keeping, or because they are dainty, or by reason of hard work. If it is because of poor keeping, they will thrive and fatten on good living. But nine times in ten cattle are thin and lank, either from daintiness or hard work. There is nothing more provoking than to see cattle poke over their feed, only eating the choicest bits, and it is

almost impossible to fatten such stock. And as far as profit is concerned, one might about as well turn his grain into a rat-hole as to feed it to cattle that have been worked down thin on good keeping. If one finds himself possessed of such a pair, he cannot easily sell them for work, and cannot fatten them in any reasonable time, and he concludes that ox labor is very unprofitable.

Instead of buying such stock because it seems cheap, we believe it better economy to purchase young, thrifty, good-shaped stock already in condition to make decent beef. The first cost may be a little greater, but so will be the receipts when they are sold. If they are fat, good provender will keep them so, and the chances are that they will continue to gain. If they do not work well, they can be sold any day to the butcher for the market price. It will also generally be found that good-natured, docile animals, such as take on fat readily, and "keep themselves well," are the best workers. The fractious high-tempered cattle worry more at their work, are more liable to be abused by drivers, and consequently do not thrive as well.

We have found, too, that oxen fat enough for the butcher, if good shaped and thrifty, stand the heat better than thin ones.

Other points, such as the breed of cattle best for farm work, the most economical mode of feeding, and kindred questions, might be discussed, but this paper is of sufficient length. To sum it all up, we believe that every farmer will do well to consider whether or not it is prudent for him to employ oxen instead of horses; and also if he decides to do so, that he should be careful in his purchase, and see whether, in the matter of oxen, it is not cheapest in the long run, to buy the best.

All of which is respectfully submitted.

Jos. S. Howe, *Chairman.*

STEERS.

The Committee award to Joseph Kittredge, No. Andover, Yearling Steers, first premium, $5.00.

A pair of Steer Calves were exhibited by J. H. Farnum, which attracted a good deal of attention, as they were perfectly handy, and were teamed by a boy twelve years old. Your Committee award them a gratuity of $3.00.

Committee—Geo. F. Mason, Daniel Carleton.

STALLIONS.

There were fifteen entries for premium.

Dr. William Cogswell, Bradford, was awarded the premium of $30 for Stallions of any age, for his "Prince William," with eight of his colts.

W. A. Keleher, Lawrence, was awarded the first premium for Stallions four years old and upwards, of $18.

Geo. W. Russell, Lawrence, second premium of $12.

M. B. Merrill, West Newbury, for his "Emperor Gold Dust," the third premium of $10.

Geo. W. Rogers, of Salem, was awarded the first premium of $10 for Stallions three years old.

H. E. Holt, of Bradford, the second premium of $6.

WARREN ORDWAY, *Chairman.*

BROOD MARES.

The Committee on Brood Mares respectfully report:

The exhibition of animals in this class was excellent, and many valuable mares were present on the grounds. After careful examination they award the following premiums:

To Justin E. Bradstreet, of Bradford, first premium, $18.

To Albert Titcomb, of Rowley, second premium, $12.

To Abiel Wilson, of North Andover, third premium, $10.

The mares of Peter Holt, Jr., of North Andover, E. A. & J. Webster, of Haverhill, and J. G. McAllister, of Lawrence, are worthy of honorable mention.

GEO. B. LORING, *Chairman.*

FAMILY HORSES.

Committee met at 2 o'clock and examined all the horses entered except L. P. Bradley's, of Haverhill, and A. E. Ambrose's, of Newbury, whose horses could not be found.

Awarded first premium to John E. Gale, Haverhill, Mass., $18; second premium to S. K. Johnson, Andover, Mass., $12; third premium to H. E. Holt, Bradford, Mass., $10.

Committee—G. W. Russell, Doane Cogswell, David Stiles, E. F. Little, Ansel W. Putnam.

FARM AND DRAFT HORSES.

The Committee award the first premium to Joshua Roberts, Gloucester, $15; second premium, to S. F. Newman, Newbury, $12; third premium, to J. O. Winkley, Newburyport, $10; fourth premium, to R. Welch, Methuen, $6.

Committee—Thos. K. Leach, Bennett Griffin, M. A. Plummer, David Knowlton, Leverett Bradley.

PAIRS OF DRAFT HORSES.

The Committee on Pairs of Draft Horses have awarded the following premiums, viz.:

First premium to T. O. Wardwell, North Andover, $15; second premium to E. P. Perley, Danvers, $10.

Nine entries were made, but only six teams contested for the prizes, and your Committee were unanimous in making the awards.

Whilst finding much to condemn in the general management of the fair, we take great pleasure in commending the efficiency of the Chief Marshal and his aids, who, by their prompt attention to duty, and gentlemanly deportment, contributed largely to the success of the "Old Essex Society." Too much cannot be said in their praise, and we trust that in the future the marshals will take pattern from the example set them in 1877 at Lawrence.

It has of course occurred to the mind of every farmer, how rapidly oxen as beasts of labor are being superseded by horses. But perhaps it is worth recording in the Transactions of our Society, that in the year 1870 the United States had 7,145,370 horses, nearly one-eighth in the whole world. This fact alone demonstrates that to us as a nation the horse is a matter of importance,—of supreme vital importance,—and should be treated accordingly; should be bred according to scientific principles; should be reared, handled and trained with care; and the result will show, as it has already shown in the United States, that what contributes to the welfare of the whole country, also contributes to the individual welfare of all classes; of all citizens; but more particularly to the farmer, with whose interests he is closely identified.

It is our belief, and it seems to be the universal judgment in this section of the country, that kind, tractable horses, weighing from 1000 to 1200 lbs., are best adapted to the present wants of the New England farmer, and we would urge that in the selection of draft horses, especial attention be given to their *fast walking*, as well as to their good working qualities.

Committee—Horace F. Longfellow, Wm. P. Bailey, Jas. H. Cheever, Henry C. Harnden.

COLTS—FIRST CLASS.

The Committee award as follows :—

To J. O. Winkley, Newburyport, for four years old Colt, first premium, $12.

E. T. Northend, Newburyport, for three years old Colt, first premium, $10.

Benjamin S. Barnes, Boxford, for three years old Colt, second premium, $5.

Committee—Geo. B. Loring, 2d, S. B. George, John J. Downing, M. C. Andrews.

COLTS—SECOND CLASS.

The Committee award as follows :—

To Daniel Tenney, Newbury, for his two year old Colt "Wheeler," first premium, $8. For his two year old Colt "Hayes," second premium, $3.

To Otis Mann, Newbury, for yearling Colt, first premium, $8.

To J. J. Downing, Andover, for yearling Colt, second premium, $3.

Committee—Otis F. Putnam, Jas. A. Montgomery, O. L. Kent, M. H. Poor, Jas. T. Johnson.

SWINE.

The Committee on Swine report :

FIRST CLASS.

To Virgil Dow, Methuen, for Breeding Sow, first premium, $10 ; to H. G. Herrick, Lawrence, for Breeding Sow, second premium, $6 ; M. Birmingham, Salem, for Boar, second premium, $6 ; Levi Emery, Lawrence, for Pigs, first premium, $6 ; C. T. Emerton, Peabody, for Pigs, second premium, $4.

SECOND CLASS.

To Benj. P. Ware, Marblehead, Essex Boar, first premium, $10; J. D. W. French, No. Andover, Essex Boar, second premium, $6; Daniel Carlton, No. Andover, Breeding Sow, first premium, $10; Jos. Kittredge, No. Andover, Breeding Sow, second premium, $6.

Committee—A. H. Gould, J. F. Burnham, R. Buxton.

SHEEP.

The Committee on Sheep report as follows:

To Joseph Kittredge, No. Andover, for his flock, special premium by D. F. Appleton, with statement, $25; to F. R. Appleton, Ipswich, best flock (Cotswold,) first premium, $10; Henry G. Kimball, Bradford, Buck, first premium, $8; F. R. Appleton, Ipswich, Lambs, first premium, $4.

C. C. BLUNT, *Chairman.*

STATEMENT OF JOS. KITTREDGE, ON EXPERIMENT IN RAISING LAMBS FOR THE MARKET.

Committee on Special Premium of D. F. Appleton:

DEAR SIRS. The flock of ewes for raising lambs kept by me last winter, was twelve in number. Two of them are Cotswolds, purchased at the sale of the late Francis Dane; the others were selected in different places and are of mixed breeds. They were fed through the winter on fair hay, but not the best, and about half a pint each of damaged beans per diem, until their lambs were born. Afterwards they had about a pint each of wheat shorts per diem, and better hay, a part of which was second crop. The oldest lamb was born Jan. 26th, all the rest early in February. A box of meal was kept, to which the lambs had access at all times. Ten of the ewes raised fourteen lambs, four pairs of twins and six single lambs. A part of the lambs were sold, and the

rest consumed in the family. Taking the price of those sold, and the market value of those consumed, the lambs of the ten ewes amounted to one hundred and five dollars ($105.00,) making an average of ten and one half dollars (10.50,) for each ewe. The sheep sheared about six pounds each of unwashed wool, which I sold for thirty-seven cents a pound, making the net income from each sheep twelve dollars and seventy-two cents ($12.72.) The sheep were turned to pasture about May 25th, and have had no grain since.

Respectfully submitted.

JOSEPH KITTREDGE,
No. Andover, Mass.

Sept. 25th, 1877.

POULTRY.—FIRST CLASS.

The Committee on First-Class Poultry, respectfully submit the following report:

The number of entries was very small, and with the exception of a few coops, was of a very inferior quality. We find only eleven entries, where a few years ago there were twenty-five or thirty, and these, according to the report of 1875, were of the very best quality.

We are satisfied that the cause of this is the want of paying sufficient premiums to pay for running the risk and expense of exhibiting *first-class Poultry;* and we also think that if the rules in regard to premiums on Poultry are not changed, in a short time you will not have any "Poultry Show" connected with your annual exhibition, except a few "mongrels," as was formerly the case.

You are willing to give two dollars premium on a plate of Grapes, and three dollars on a plate of Apples or Pears, and from ten to twenty-five dollars for a Cow or Bull, and we would ask if good Poultry is not as deserving of high premiums as good fruit or beef.

Your Committee would respectfully recommend that the premium on Poultry be as follows: First premium *five* dollars, ($5.00;) second, *three* dollars, ($3.00;) and third premium *one* dollar, ($1.00;) and we would also recommend that the present "American Standard of Excellence" be adopted as a guide for the judges, and that birds scoring less than *eighty* points, shall not be entitled to first premiums.

Of the coops entered this year, Chas. P. Jacobs, of Peabody, had a very fine trio of Light Brahmas, and C. O. Putnam, of Danvers, had some good Black Cochins. The following premiums and gratuities were awarded:

Light Brahmas,—C. W. Mann, Methuen, gratuity, 50 cts.

Light Brahmas, Chicks,—C. P. Jacobs, Peabody, first premium, $2.

Dark Brahmas,—Frank J. Bradley, Methuen, gratuity, $1.

Black Cochins,—C. O. Putnam, Danvers, first premium, $2.

Black Cochins, Chicks,—C. O. Putnam, Danvers, second premium, $1; gratuity, $1.

Pekin Ducks,—C. W. Mann, Methuen, first premium, $2; second premium, $1.

Aylesbury Ducks—M. W. Keyes, Methuen, first premium, $2.00.

Committee—W. M. Ward, Jasper Rea, John Swinerton.

POULTRY—SECOND CLASS.

The Committee award;—

Brown Leghorn Chickens—George J. Johnson, Rowley, first premium, $2; M. C. Andrews, Andover, do., second premium, $1; L. F. Weston, Danvers, gratuity, $1; Frank J. Bradly, Methuen, do., gratuity, 50 cents.

White Leghorn Chicks—Frank J. Bradly, Methuen, first premium, $2.

Plymouth Rock—Frank J. Bradly, Methuen, gratuity, $1.

S. S. Poland—L. F. Weston, Danvers, gratuity, 50 cents.

White Bantams—S. M. Davis, Lawrence, gratuity, 50 cts.

Collection of Pigeons—C. O. Putnam, Danvers, gratuity, $1.

Committee—W. H. Allen, C. D. Ordway, Wm. Howe Burnham.

PLOUGHING—DOUBLE TEAMS.

The Committee on Ploughing with Double Teams report:

First premium to Benjamin H. Farnham, of North Andover, $12.00.

Second premium to J. D. W. French, of North Andover, $10.00.

Committee—A. B. Fellows, Anthony Hatch, T. G. Thurlow, G. S. Phippen, J. L. Farnham.

PLOUGHING WITH HORSES.

The Committee on Ploughing with Horses beg leave to offer the following report. The inequality of the land rendered a decision in some cases difficult.

First premium to Joshua N. Kent, of Newbury, $12.00.

Second premium to R. S. Bray, of Newbury, $10.00.

Third premium to M. H. Poor, of West Newbury, $8.00.

Fourth premium to George W. Russell, Lawrence, $6.00.

Fifth premium to Paul T. Winkley, of Newburyport, $4.

Committee—W. J. Dale, Jr., Charles W. Ordway, Wm. Thurlow, Israel Herrick, Thomas H. Balch.

PLOUGHING WITH SWIVEL PLOUGHS.

In addition to the mere announcement of premiums in this department, it seems desirable to say something in regard to the merits of the different ploughs used.

We judge from the interest taken in the match that the farmers of the county are generally interested in the Swivel Plough, and note with attention the improvements made from year to year.

The Ploughs used were the "Holbrook,"—an old favorite with many, and as held by Mr. Poor, ploughing for Mr. Russell, doing so well as to claim the first premium for work done with double team.

We noticed that this Plough ran deeper than required by the rule of the Society, averaging nine inches, and turning the sod at that depth as well as is usually done at six or eight inches.

Mr. Foster used the "Lufkin,"—a Plough noticeable for the absence of the usual hasp for holding the mould board in position; a self-locking arrangement securing it firmly as soon as the Plough is reversed. This also did excellent work.

Mr. Smith used the "Holbrook," but for some reason not apparent to the Committee, the work done was not as good as we expected from a strong team and experienced ploughman. The Swivel Plough was *first* constructed to run on side-hills, so as to avoid turning half the furrows up-hill,—and many Ploughs do good work on land of that description which fail when put on ground as level as that ploughed at the show this year.

It has been the aim of manufacturers of late to construct a Plough that should turn as flat a furrow on level land as any Plough not swivel that could be produced.

In two Ploughs used this year we have the latest results of this effort,—the "Ames' Centennial," used by Mr. Norwood, and the "Pettengill," run by Mr. Perley, either of which would be a valuable addition to the outfit of most of our farms.

Several of the Committee thought that we should have had a better *test* of the quality of the Ploughs and skill of the ploughmen, if the land ploughed had been like most of our

farms in this county, in having stones to throw out the plough, or roots of trees to prevent its even running.

As it was, however, no obstruction was met with, and the teams could go at their fastest walk with no danger of being "brought up standing" by striking a fast rock, as so often happens to many of us in breaking up.

We think too much importance cannot be attached to good ploughing, as in actual farming the success of the crop depends largely on the thorough ploughing of the land at the start.

It seems to me that an additional argument to the one often presented for keeping fields free from stones and bushes,—(namely, that they may be mowed easier,)—can be adduced from the fact that it is possible to plough a clean lot *thoroughly* with even furrows and at a uniform depth, at an expense which will be less per acre than is required to *imperfectly* plough a rough and rocky field.

Of course this must be restricted within reasonable limits, as on my own farm, in fields from which stones have been dug out and removed every time the soil has been broken up for many years, we still find some at every ploughing, as they are worked up from below by the frost. Hence it is only in degree, not absolutely, that we farmers of Essex can clear our lands and give free course to the plough.

But doing this as well as we can, with our hands made skilful by practice at home, and our eyes trained to accuracy in the width of our furrows, we shall be ready to enter the lists in friendly rivalry at our annual shows, and shall hope to secure not only the premiums of the Society, but also the larger rewards which skill and enterprise always bring to those who possess them.

Premiums awarded :—

To William A. Russell, Lawrence, with oxen, first premium, $12.

To John P. Foster, North Andover, with oxen, second premium, $10.

To Peter Smith, Andover, fourth premium, $5.

To C. J. Norwood, Ipswich, with horses, first premium, $10.

To Edward P. Perley, Danvers, with horses, second premium, $6.

CHAS. J. PEABODY, *Chairman.*

CARRIAGES.

The Committee on Carriages award to John E. Bailey, of Marblehead, for Foster rubber spring Buggy and Sleigh, diploma; Charles Manson, of Haverhill, for three wagons, gratuity, $6; J. W. Joyce, Lawrence, Meat Wagon, $5; Spear & Fifield, Methuen, Grocer's Wagon, $5, and for Wagon, (Provision Dealer's) diploma; William Poor, Andover, Meat Wagon, $5; Geo. H. Ferguson, Lawrence, Light Express Wagon, $5, and for Top Buggy, diploma; M. Barnes, Lawrence, two Top Carriages, $10, and Sleighs, $5.

Committee—A. E. Goodwin, William Gunnison, David Smith, Henry Hobbs.

BREAD AND HONEY.

There were fourteen entries of Bread, one of Honey, and three of Preserves. The Committee award gratuities as follows, viz:

To Mrs. W. Leitch, of Andover, $1.50; Abby Haseltine, of Lawrence, $1; Mrs. J. Pillsbury, of Lawrence, $1; Mrs. Sarah Birtwell, of Lawrence, $1; Mrs. William Brown, of Lawrence, $1; Mrs. E. L. Kent, of Lawrence, $1; Mrs. Jasper Rea, of Andover, $1; Mrs. Stephen E. Abbott, of Andover, $1; Mrs. Rebecca F. Cole, of Andover, $1; Mrs. N. E. Ladd, of Groveland, $1; Broadway Cracker Bakery, Lawrence, $3.

Honey—H. Alley, of Wenham, $2; Silas M. Locke, of Salem, one Model Hive and Observatory Hive, $1.

Preserves—Mrs. J. Pillsbury, of Lawrence, $1; Mrs. A. P. Webster, of Haverhill, 50 cents; N. T. Kimball & Co., of Bradford, 50 cents.

J. A. PUTNAM, *for the Committee.*

PEARS.

The Committee award as follows:

Premiums of $3 each, for the following varieties: H. B. Robie, Lawrence, Duchesse; John O'Brien, Bradford, Beurre Clairgeau; Wm. Huff, Newburyport, Marie Louise and Belle Superfin; Albert Kimball, Bradford, Sheldon and Belle Lucrative; S. Sawyer, Lawrence, Winter Nelis; A. J. Hubbard, Peabody, Louise Bonne de Jersey, Swan's Orange, and Urbaniste; T. C. Thurlow, West Newbury, Doyenne Boussock; J. Henry Hill, Amesbury, Buffum and Dana's Hovey; Wm. H. Huse, Newburyport, Seckel; Wm. H. Perkins, Newbury, Howell; D. H. Stickney, Groveland, Lawrence; Peter Waite, Danvers, Bartlett; Edward F. Webster, Haverhill, Beurre Bosc; John Preston, Georgetown, Beurre d'Anjou; Mrs. Dr. Kenney, Lawrence, Vicar; A. Lackey, Haverhill, St. Michael.

Premiums of $1.50 were awarded for the following: M. B. Kenney, Lawrence, Flemish Beauty; J. C. Craig, Lawrence, Beurre Diel; John Preston, Georgetown, Bergamot.

Premiums of $1 each were awarded for the following: Wm. H. Huse, Newburyport, Kingessing, Wm. Huff, Newburyport, Summer Orange; H. G. Herrick, Lawrence, Seckel; H. A. Prescott, Lawrence, Sheldon; S. M. Davis, Lawrence, Duchesse; Q. Bradley, Methuen, Duchesse; P. H. How, Lawrence, Sheldon; T. Johnson, No. Andover, Beurre Clairgeau; J. W. Nichols, Lawrence, Sheldon; Baldwin Coolidge, Lawrence, Sheldon; B. F. Stanley, Newburyport, Lawrence and Duchesse; Albin Yeaw, Lawrence, Winter Nelis; E. B. Currier, do Beurre Bosc; J. S. Ives, Salem, Sheldon; Solomon Fuller, Danvers, Duchesse; Franklin Upton, Danvers, Beurre Bosc; D. H. Stickney, Groveland, Anjou; B. F. Huntington, Amesbury, B. Hardy; T. H. Balch, Groveland, Louise Bonne; Elbridge G. George, Groveland, Sheldon.

T. C. Thurlow, West Newbury, best plate, 24 specimens, premium, $6; A. J. Hubbard, Peabody, best collection, 20

varieties, premium, $8; Peter Waite, Danvers, second best collection, 15 varieties, premium, $6; Wm. H. Huse, Newburyport, 10 varieties, premium, $4.

Committee—John W. Marshall, Edward Harrington, Josiah Newhall, Thomas Hale.

APPLES.

The Committee beg leave to report that the quantity offered for exhibition was less, and the quality not as good as is usually shown at the Essex County Fairs.

They award the following premiums of $3 each :—

Henry Thwing, Groveland, Baldwins; Joseph Moore, Peabody, Danvers Winter Sweet; Solomon Fuller, Danvers, Hubbardston: Peter Waite, Danvers, Kilham Hill; B. F. Huntington, Amesbury, Ladies' Sweet; Peter Waite, Danvers, Porter; Peter Waite, Danvers, Pickman's Pippin; W. W. Perkins, Newbury, Roxbury Russet; J. Henry Hill, Amesbury, Rhode Island Greening; Solomon Fuller, Danvers, Sweet Baldwin; J. Henry Hill, Amesbury, Gravenstein; Peter Waite, Danvers, Hunt's Russet.

W. W. Perkins, Newbury, best collection of fifteen varieties, $6; Peter Waite, Danvers, best ten varieties, $4.

Gratuities of $1.50 each to J. Henry Hill, Amesbury, Minister; W. W. Perkins, Newbury, Northern Spy; D. Plummer, Newbury, King of Tompkins Co.; C. C. Barker, North Andover, Baldwin; S. Sawyer, Lawrence, Baldwin; J. Henry Hill, Amesbury, Hyslop Crab; Edwin B. George, Groveland, Hubbardston.

Gratuities $1.00 each, to Peter Waite, Danvers, Fall Harvey; Solomon Fuller, Danvers, Twenty Ounce; D. H. Stickney, Groveland, Hubbardston; A. J. Hubbard, Peabody, Danvers Winter Sweet; D. H. Stickney, Groveland, Northern Spy.

Committee—F. P. Putnam, John T. Wood, James Flint.

PEACHES, GRAPES, AND ASSORTED FRUIT.

The Committee have awarded the following premiums and gratuities, viz. :—

Peaches—For the best nine specimens of Freestone White Flesh, $2, to Caleb Saunders, of Lawrence; for the best do. Yellow Flesh, $2, to E. F. Webster, of Haverhill; best do. Essex County Seedling, $2, to A. V. Bugbee, Lawrence. A gratuity of $1 to J. H. Eaton, Lawrence, for Orchard House Peaches; 50 cents each, for single plates, to Joseph Moore of Peabody, Solomon Fuller of Danvers, and Norman S. Cole of West Boxford.

Grapes—For the best four bunches of Concord, Rogers' No. 3 or Massasoit, and Rogers' No. 39, $3 for each variety, to George W. Gage of Methuen; for the best four bunches of Iona, Creveling, Rogers' No. 4 or Wilder, No. 19 or Merrimac, No. 22 or Salem, $3 for each, to E. P. Richardson, of Lawrence; for the best Hartford Prolific, $3, to B. Goodwin, of Haverhill; for the best Isabella and Rogers' No. 15 or Agawam, $3 each, to D. H. Stickney, of Groveland; for the best Delaware, $3, to James Lowrie, of Danvers; for the best Clinton, $3, to L. K. Pemberton, Groveland; for the best Allen's Hybrid, $3, to Baldwin Coolidge, of Lawrence; for the best Diana, $3, to John O'Brien, Bradford; for the best collection of ten varieties of Native Grapes, $7, to Geo. W. Gage, of Methuen.

Your Committee would also award a premium of $1.50 to each of the following persons: E. P. Richardson, Lawrence, for Worden; George W. Gage, Methuen, for Cottage; D. H. Stickney, Groveland, for "Stickney's Seedling;" George W. Ladd, Bradford, "Ladd's Seedling."

This last so nearly resembles the Delaware that the Committee were in doubt—a majority thinking it might be the Delaware not fully ripe; but later information, and an examination of the vine by one of the Committee, has led us to place it on the list of "other worthy varieties."

Gratuities—To Peter Smith, of Andover, for a fine collection of Hot House Grapes, $2; to H. B. Robie, Lawrence, $1; to N. Bodwell, Georgetown, $1, for a collection of Native Grapes; to John O'Brien, Bradford, and B. Goodwin, Haverhill, $1 each; to M. W. Bartlett, West Newbury, and Henry Shaw, Lawrence, 50 cents each.

For the best basket of Assorted Fruit, $4, to Peter Wait, Danvers; second best, $3, to A. J. Hubbard, Peabody.

Quinces—For the best plate of Orange Quinces, $1, to Peter Wait, Danvers; for the second best plate of Orange Quinces, $1, to Baldwin Coolidge, of Lawrence.

We congratulate the Society on the decided step in advance which has been made this year in the arrangement of fruit in our hall of exhibition,—that is, of having *each variety* by itself, and not scattered promiscuously on several tables, as has formerly been the case. It has in former years been impossible for any fruit committee to do justice to the exhibitors, and this year we find many of the exhibitors themselves decidedly opposed to this "new arrangement;" especially those who had for many years been in the habit of heaping all their fruit together—thus aiming more for a large "collection," than for more choice specimens of fewer and better varieties. We trust that in future this plan will be more perfectly carried out, and that all the contributors will see the propriety of the new method. We would suggest the importance of having the several fruit committees commence work at an earlier hour, so that a larger part of their duties may be performed before the hall is crowded with visitors.

The display of grapes this year was very fine indeed, and the neat arrangement of the tables was a credit to those who had charge in this department.

This year has been a favorable one for the grape in all this vicinity, as it always does best in a *dry* warm season, without any hinderance from early frosts. Hence we should plant the grape only in the driest and earliest locations. Even in western New York and Ohio, where the climate is much more

favorable for this fruit than here, experience has proved to them that grapes can only be grown with any amount of certainty upon the rockiest and driest hillsides. Again we think that experience has proved to us that only the most hardy vines of our purely native species, (the Lobrusca,) can be depended upon for a term of years. This may not be the decision of the whole Committee, for we know that many still adhere firmly to the Rogers and other hybrids, but those of us who have for years made the growing and testing of vines a business, are careful not to invest largely in any grape of foreign parentage; and when any new grape presents itself as the "best yet introduced," the first inquiry should be, does it inherit foreign blood from either of its parents? If so, it will most likely inherit a feeble constitution, followed by mildew and an early death. Careful cultivators may, and often do, succeed for years with these high blooded grapes, but they require constant watchfulness, and a good covering every winter is indispensable. We would not by these remarks discourage any from raising this, one of the most healthful and delicious of all fruits, but would rather encourage every one whose circumstances will permit, to do it *intelligently*—to select none but the most approved hardy varieties, and plant and cultivate as experience has proved best for this locality. The discouragements which seemed to hang over us a few years ago in the shape of blight and mildew, have in a great measure passed away, and we can but hope that a "new era in grape culture" is about to dawn upon us.

There were but few *peaches* presented this year, the crop having been very nearly a failure, and only the latest ones could be kept for this exhibition. This crop, which is generally considered uncertain in New England, has for several years past been a partial success, especially in certain high, dry locations in this vicinity, where an *entire* failure has not occurred for something over twenty years before. Just warmth enough to swell the fruit buds at a certain time during winter, and then a sudden freeze afterwards, was evi-

dently the sole cause of this failure, as the trees never looked more healthy and promising, than in the autumn before.

This fall again we have reason to take courage and hope for the best, and trust that at some future time, when we have learned more fully the requirements of the peach, we shall be blessed with plentiful crops, as of old. We would suggest to novices, however, who design to plant peach trees, that they require a *dry* soil, thoroughly cultivated, but no animal manure of any kind, but rather muck, and especially *potash* in liberal quantities. The aim should be not to produce a late growth, but healthy, well ripened wood, which is the only kind that will endure our winters. Trim out all dead and sickly wood every year about the first of June. Plant *hardy* and rather early varieties. Many kinds recommended by nursery agents are too late, and will not ripen at all in this latitude. For orchard culture, do not plant too thickly.—16 or 18 feet is near enough. Training upon fences, and pegging down branches to be covered in winter, is very pretty amusement for the amateur, and orchard house culture for those who can afford it is very pretty and sometimes profitable.

Premiums are annually offered for the best Baskets of Assorted Fruits, but scarcely ever more than two competitors appear for the prizes, and these with very little variation from year to year. Cannot others take hold in this department, and give us something still more tasty and elaborate than we are accustomed to see? It certainly would add much to the attractions of the hall, besides giving us a little more pleasant rivalry.

Quinces, your Committee have taken under their special charge, as neither the Committee on Apples nor Pears thought they belonged to them. Two very nice plates of Orange Quinces were presented, and both took the first premium; but certainly this fruit ought not to be overlooked, especially as long as it brings such high prices and can be so easily raised.

One other fruit is worthy of remembrance, which we formerly raised in great abundance in this county, but which now we never see upon our exhibition tables,—namely, the Plum. Why should this fine fruit be wholly abandoned, as long as it has been fully proved that its two greatest enemies, —the Curculio and the Black Knot,—can be successfully dealt with? Then we have new, but coarse varieties, that are hardly affected by these enemies at all, and which even for cooking purposes would well repay the trouble of raising. We sincerely hope we shall see the time when this fine old fruit will be cultivated to some extent, if we do not have it in its former abundance.

Respectfully submitted,

Committee—T. C. Thurlow, D. H Stickney, J. Henry Hill, Richard Ward, Peter Wait.

FLOWERS.

The display in this department was very good, and yet the Committee could but regret that so few of the towns in our County sent contributions to this most attractive feature of our Fair. So much progress has been made in the last few years, in the public taste as well as in the cultivation of flowers, that we are led to expect a finer display each year from the many gardens of our good old county.

Those ladies who sent the numerous and varied collections of wild flowers deserve especial commendation. There were many rare and beautiful varieties, and their tasteful arrangement added much to the beauty of the floral department.

The ladies of Lawrence deserve much credit for the kindly interest and zeal they manifested in this exhibition of the Society. The fine effect of the flowers and plants displayed was due to their skilful arrangement.

The Committee found a serious drawback in the lack of vases or dishes suitable for the display of cut flowers, and

hope the Society will heed the suggestions of the Committee of last year, and furnish better accommodations for future exhibitions.

We would suggest that the younger portion of our county be encouraged to contribute to this department, by the offering of premiums for bouquets or flowers raised by youth under fourteen years of age.

While we are glad to welcome the beautiful plants and fine flowers of the professed florist to our exhibitions, yet we would suggest that premiums should rather be awarded to individuals who cultivate a few flowers for their own pleasure, and succeed in raising fine specimens.

We hope to see the premium list revised, or enlarged, before another exhibition, so as to include some new and fine varieties of flowers.

The Committee award as follows :—

Best pair Bouquets, first premium, E. W. Hatch, Haverhill, $3. Gratuities of 50 cents to E. Flynn, Lawrence, Emily F. Carleton, North Andover, Mrs. J. H. Hill, Amesbury.

Best Hand Bouquets, first premium, E. Flynn, Lawrence, $3. Gratuity, 50 cents, L. P. Weston, Danvers.

Floral Designs, first premium, Miss Emma Gage, Methuen, $2. Gratuities, E. Flynn, Lawrence, $2 ; Mrs. N. E. Ladd, Groveland, $1.

Cut Flowers, first premium, Mrs. L. P. Weston, Danvers, $2. Gratuities, $1 each, to Mrs. Henry Brickett, West Newbury, and Industrial School, Lawrence ; 50 cents to E. J. Craig, Haverhill.

Dahlias, first premium of $1 to E. Flynn, Lawrence. Gratuities of 50 cents each to Mrs. J. H. Hill, Amesbury ; Mrs. E. W. Hatch, Haverhill.

Gladiolus, first premium of $1 to Mrs. Henry Hill, Amesbury.

Petunias, first premium, $1, to Miss Emma Gage, Methuen. Gratuities, 50 cents, to Mrs. J. H. Hill, Amesbury ; Miss A. Page, Groveland.

Pansies, first premium, $1, to Mrs. John L. Hutchinson, Lawrence. Gratuities, 50 cents, to Mrs. J. H. Hill, Amesbury; Mrs. M. S. Jenkins, North Andover; Miss Addie Page, Groveland.

Phlox, first premium, $1, to J. H. Hill, Amesbury. Gratuity, $1, to Miss Emma Gage, Methuen.

Verbenas, first premium, $1, to E. Flynn, Lawrence. Gratuity, 50 cents, to Industrial School, Lawrence.

Best Native Flowers, first premium, $1, Mrs. M. E. Fuller, Middleton. Gratuities, $1, to Miss Emma Gage, Methuen; Mrs. Wm. Horner, Georgetown; 50 cents to A. D. Batchelder, Georgetown.

Largest and Best Display by one individual, E. Flynn, Lawrence, $4. Gratuities, 50 cents each, Cut Flowers, J. W. Smith, Andover; Orpine Plant, Mrs. Jane Sweet, Lawrence; Fernery, Mrs. W. S. Horner, Georgetown; Aloe, Mrs. E. W. Hatch, Haverhill; Apple Blossoms, G. H. Tufts, Middleton; Egg Plants, Mrs. F. F. Tucker, Lawrence; Arbutulon, Mrs. W. T. McClure, Lawrence; Ferns, A. R. Gage, Boxford; Begonias, E. Flynn, Lawrence, $1; Japan Lilies, 50 cents, to Mrs. J. H. Hill, Amesbury; Climbing Fern, Charles Flynn, Lawrence; Hand Bouquet, Mrs. S. S. Knox, Lawrence; Hand Bouquet, Mrs. J. H. Hill, Amesbury; Cactus, Mrs. A. D. Griffin, Haverhill; Orange Tree, Charles Flynn, Lawrence; Rustic Stand, $1, to E. F. Webster, Haverhill; Cactus, Coleus, and Ferns, Charles Flynn, Lawrence, three gratuities, $2.50.

Mrs. Charles Perley, *for the Committee.*

VEGETABLES.

The Committee, on repairing to the tent devoted to the show of Vegetables, found the display not as large as usual, but were much pleased that the superintendent of this department of our show had arranged the different varieties of veg-

etables in their respective classes, so that the labors of the Committee were much facilitated by having all the specimens of each variety exhibited together.

We would strongly urge all exhibitors to conform *precisely* to the rule adopted by the Society in relation to the amount and size of vegetables to be exhibited.

We found some exhibitors showing a much larger amount than was necessary to compete for the premiums, exhibiting a bushel when only a peck was required. If they would select only the required number or amount, taking none but the most perfect and best adapted for the use to be made of them, they would be much more likely to secure a premium than before. If, for instance, in selecting the Potato for exhibition, as that is almost entirely used for the table, every one would admit at once that those specimens best adapted in size and quality for that use, would be entitled to the premium over other specimens, though larger, but of coarse and inferior quality.

Or, supposing the vegetable exhibited is devoted entirely to the use of stock, as the Mangel Wurtzel, all would say that the largest specimens, or those furnishing the most food and nutriment, should take the premiums.

So on through all the varieties of vegetables, if exhibitors would be more critical in their selections, according to the uses to be made of them, and exhibit only the requisite amount, our tables would show a more tasteful and uniform appearance, and give better satisfaction, not only to the Committee and exhibitors, but to all visitors who look upon them.

Hoping these few suggestions may be acted upon in our future shows, your Committee submit the following awards of premiums :—

A premium of $3 is awarded for each of the following varieties :—Levi Emery, Lawrence, E. T. Beet; Virgil Dow, Methuen, L. O. Carrots and P. T. Flat Turnip; M. F. Batchelder, Peabody, S. H. Carrot and Musk Melon; T. O. Wardwell, North Andover, Mangolds; A. W. Phippen, Methuen,

Ruta Baga; G. W. Russell, Lawrence, Parsnips; R. T. Jaques, Newbury, Danvers Onion; J. J. H. Gregory, Marblehead, Y. F. Onion, Red Onion, Hubbard Squash, Marblehead Squash, Melon, green flesh, Acme Tomato, best collection of Tomatoes; Henry Webber, North Andover, E. R. Potato; N. G. Abbott, Andover, Fottler Cabbage, Stone Mason Cabbage; R. Goodwin, Haverhill, Savoy; C. R. Anderson, Boxford, Red Cabbage, Cauliflower; Peter Smith, Andover, Celery; C. K. Ordway, West Newbury, Field Corn; G. B. Bradley, Methuen, Sweet Corn; G. S. Phippen, Methuen, Marrow Squash; C. O. Putnam, Danvers, Turban Squash; Frank M. Dow, Methuen, Watermelon; A. E. Low, Essex, Paragon Tomato, Trophy Tomato; H. A. Stiles, Middleton, Cranberries.

A second premium of $2 each for the following: M. F. Batchelder, Peabody, Fottler Cabbage, Red Cabbage; C. O. Putnam, Danvers, Savoy Cabbage; M. C. Andrews, Andover, Stone Mason; O. P. Killam, Boxford, Cranberries; Joseph S. Holt, Andover, Cranberries, $1; J. J. H. Gregory, Marblehead, Garden Seed, premium, $8.

Gratuities of $2 each as follows: G. W. Russell, Lawrence; G. B. Bradley, Methuen; Colin Johnson, North Andover; Luke Cunningham, Andover; Edwin Upton, Andover; C. R. Anderson, Boxford; $1.50 to Allen Lee, Manchester; $1 each to Miss Dove, Andover; A. F. Clark, Lawrence; Henry Nice, Lawrence; 50 cents each to Richard Warwick, Lawrence; Amos B. Poor, Haverhill; Daniel Carlton, North Andover; R. Goodwin, Haverhill; E. F. Webster, Haverhill; E. P. Richardson, Lawrence.

Aaron Low, *Chairman.*

COUNTERPANES, CARPETINGS AND RUGS.

WROUGHT COUNTERPANE.

First premium, no award. The Committee did not judge *any* of the entries as combining sufficient excellencies to be worthy of the first premium.

Second premium, $2, awarded to Abbie R. Howe, for meritorious combination of colors, giving good general effect, and good workmanship.

Gratuities of $1 each, were awarded to Mrs. S. Allison, Lawrence, two quilts, well wrought and arranged; Mrs. J. M. Ingalls, Danvers, one Centennial quilt, well wrought and designed; Mrs. R. M. Leavitt, Danvers, Quilt made of two colors only, giving good effect; Mrs. N. G. White, Lawrence, Silk Counterpane, well wrought and designed; Mrs. Henry R. Abbott, of ———, one Quilt of many pieces, very neatly sewed and arranged; Mrs. Frank C. Came, Haverhill, one Quilt, simple design, giving good effect, well wrought.

HAND-WROUGHT CARPET.

First premium, $5, awarded to the Orphan Asylum, Lawrence. This was the only entry, well and neatly made, and of good design.

WROUGHT HEARTH RUGS.

First premium, $3, awarded to Mrs. H. C. Crocker, Haverhill, for harmonious arrangement of colors in design, excellence of workmanship, and utility.

Second premium, $2, Mrs. T. P. Frost, Lawrence, Rug, thoroughly and neatly made, nicety of finish and appearance.

Gratuities of $1 each were awarded to C. W. Kendall, Lawrence, Braided Rug, well made and very serviceable; Mrs. Mary S. White, No. Andover, five Rugs, for variety of designs, and good work; Mrs. Ada Trull, Lawrence, four Rugs, well made and nicely finished; Mrs. Rebecca Colby, Lawrence, one Rug, well and neatly made and finished.

CARRIAGE ROBE.

Gratuity of $2 to Mrs. Anna H. Rowe, Lawrence.

F. E. Clarke, *Chairman.*

LEATHER WORK.

The Committee have examined the articles exhibited, and regret that a larger number of articles could not have been presented. But the articles are of superior workmanship and stock, and well worthy of a premium. We therefore award each exhibitor a premium of Five Dollars.

Thomas F. Hill, Georgetown, one Single Harness, gratuity, $5; E. A. Putnam, Beverly, one Single Harness, $5; P. B. Robinson, Lawrence, one case Shoes, $5.

Committee—John I. Ladd, E. W. Jacobs, Warren Ordway.

MANUFACTURES AND GENERAL MERCHANDISE.

The Committee award to Thomas Hall, Lawrence, Mangle, $3; B. S. Hale & Son, Lawrence, Fish Lines, $2; Smith & Dove, Andover, Flax and Flax Threads, $2; Carter & Wilson, Lawrence, Hosiery, $2; John M. Richards, Lawrence, Piano, $2; W. L. Dustin, Lawrence, Planes, $1; Mrs. Symonds, Lawrence, Case Millinery, $4; Mrs. M. S. Anderson, Case Millinery, $2; Chas. J. Gillon, Lawrence, Steam Engine, $1; J. Batchelder, Lawrence, Lap Board, $1; G. A. Osgood, Haverhill, Spring Bed, $1; M. Donovan, North Andover, Hand-made Horse Shoes, $1; H. C. Sleeper, Haverhill, three Canes, $1; A. J. Walker, Lawrence, Spice Holder, $1; A. Nichols, Danvers, Silk Cocoons, $1.

Committee—A. P. Bateman, H. M. Goodrich, Wm. D. Lamb.

FANCY WORK AND WORKS OF ART.

Premiums of $3 to Mrs. J. Hosmer Kendall, Lawrence, Oil Painting; Miss M. P. Needham, Oil Paintings; Mrs. Walter R. Rowe, Lawrence, Pillow Sham Embroidery; Mrs. A. P. Newhall, Lynn, Pen Marking, twenty-four pieces.

Premiums of $2 to L. Joseph Fell, Lawrence, eight pictures; H. Bundy, Lawrence, Oil Portraits; A. C. Puffer, Methuen, Butterfly collection; Mrs. Parker Cross, Methuen, Collection of Insects; F. W. Coffin, Marblehead, Fancy Worsted Work; W. F. Roaf, Lawrence, Jack Knife Carving; George C. Stevens, Lawrence, Carved Wood, Frieze.

Premiums of $1 to Miss M. E. Morrison, Lawrence, Oil Paintings; A. C. Saunders, Haverhill, Leather, Felt and Paper Canes; Mrs. C. T. Wilcox, Lawrence, Sofa Pillow; Miss A. E. Foster, Methuen, Worsted Wreath; Mrs. D. G. Myrick, Lawrence, Hair Wreath; Miss D. L. Fisk, Lawrence, Pillow Cases; Mrs. H. G. Cummings, Lawrence, Silk Embroidery; Mrs. E. E. Mann, Lawrence, Mottoes; Mrs. L. S. Blanchard, Lawrence, Birch-Bark Pictures; Mark Knipe, Haverhill, Stuffed Birds; Anson L. Griffin, Lawrence, Stuffed Owl; S. Huse, Methuen, Chair and Foot Rest; N. E. Abbott, Lawrence, Jig Sawing; Miss L. S. Blanchard, Birch Bark Pictures; Mrs. Caleb Saunders, Lawrence, Fire Screen; George Jones, Lawrence, Model Ship; T. C. Rogers, Lawrence, Button Cross; Miss N. G. White, Lawrence, Fancy Work.

Premiums of 50 cents to Miss M. O. Barrett, Peabody, Oil Paintings; Maria Kimball, Haverhill, Sofa Covering; Chester Chubb, Lawrence, Picture Frame; Mrs. F. C. Wiggin, South Lawrence, Wax Cross; Mrs. Joseph Churchill, Lawrence, Motto; Mrs. Charles Hodge, Lawrence, Tidy; Miss E. H. Sugatt, Lawrence, Wreath; Miss E. F. Carleton, North Andover, Tidy; Mrs. J. E. Kimball, Lawrence, Moss Cross; A. L. Griffin, Lawrence, Stuffed Owl; James Sanderson, Lawrence, Crayons. Baldwin Coolidge, Lawrence, $3, for specimens of Modelling.

Committee—Mrs. A. P. Clark, Mrs. H. L. Bowdoin, Mrs. F. S. C. Herrick.

CHILDREN'S WORK.

The Committee have examined the articles exhibited, and have awarded the following premiums and gratuities :—

Maud Hunkins, Lawrence, 3 years 5 months old, one quilt, $3 ; Charles Dunning, Lawrence, one Painting of Peaches, $1 ; Laura F. Dunning, one Picture, (Spatter Work,) $1 ; Georgie F. Whitcomb, Doll's Dress, $1 ; Hattie Morrill, Lawrence, Rug, $2 ; Minnie L. Bean, Lawrence, one case Worsted Birds, $1 ; Martha E. Coupe, Worsted Motto, $1 ; John S. Colby, one Bracket, $1 ; Maud Rodencizer, Edging, $1 ; Caddie Hutchinson, Hair Pin Holder, 25 cents ; Clara A. Day, Motto, $1 ; Mary M. Blanchard, Silk Quilt, $1 ; Nellie Bingham, Tidy, 25 cents.

Committee—Mrs. Edward W. Jacobs, Mrs. L. H. Bowdoin, L. B. Hood.

IMPROVING PASTURE AND WASTE LAND.

Two members of your Committee met upon the 12th day of July, visited the farm of Joseph Horton, of Ipswich, and inspected the tract of land entered by him for premium. There being no other competitor, we award to him the premium of $15. The mode of experimenting by Mr. Horton, is fully set forth, and in a clear manner explained, as appears by his statement annexed.

The nature of the soil, and all results of his experiments, appear to the Committee as well worthy of mature consideration by members of our Society,—that from the experience of one, large numbers may derive material benefit, as upon every farm in the County there are tracts of land which may be greatly improved.

Benefits resulting from experiments upon unproductive tracts of land, tend to strengthen the cultivator of the soil, and any improvement advancing the value of land, is of pecuniary benefit, not only to the actual owner of the soil, but to the community as a whole. No prosperous business can

be carried on which confines the advantages derived thereby within a narrow circle, as success in one branch of business assists another. Each acre of land, now unproductive, that is made to produce any description of crop whatever in paying quantities, adds so much to the general welfare of the whole, and should thus be recognized.

The experiments of Mr. Horton are only starting points, from which others may begin and extend their operations, and prove more successful than they have heretofore done. We cannot rest on present results with a confidence that nothing more permanent or productive can be realized. The wheels of improvement are constantly moving, and happy is the originator of any experiment which will tend to accelerate the movement towards prosperity. Every unproductive acre of land treated by Mr. Horton's method, is enhanced in value, and makes the owner thereof more prosperous and wealthy.

Your committee would recommend to all to try experiments upon some piece, large or small, marking the results, and keeping a full record of every item of expense and the amounts realized, preparatory to a more extended and thorough development upon a larger scale; thus exhibiting plainly the advantages made to appear yearly, and giving to the agriculturist the result of the various modes employed to bring about favorable results.

We trust that Mr. Horton may still continue to improve his pastures, making known to us future operations upon other lands to be reclaimed by him; and that the termination of his annual labors may be presented to us, showing more profit over the expenditure made; and that from his experience many others may in a similar manner present for our consideration improvements in the same line of procedure, thus presenting greater inducements to the husbandman to advance in his profession, with good profits upon the enterprises he may undertake for the benefit of himself and posterity.

Committee—Amos Poor, Benj. S. Barnes.

STATEMENT OF JOSEPH HORTON.

To the Committee on Improved Pasture Lands. Gentlemen:—The land that I offered for your inspection, has been in pasture a great many years,—not having been ploughed or cultivated within the memory of my oldest neighbors,—and measures 152 sq. rods. The soil varies from a stiff clay to a light, yellow loam; and the surface, for the most part, is covered with small, low bushes.

Treatment. With a strong pair of oxen and a plough,—and I find that a medium-sized plough, with a straight, sharp coulter reaching to the plough-point, is the best,—I plough off the hillocks and ridges, frequently assisting the team by cutting through the roots with an old axe. After ploughing I leave the furrows exposed to the sun for a few days, and then cut and cart into a heap to burn.

A fire is started at once, and is kept burning until everything is consumed. The field was then ploughed, rolled, and harrowed, in the usual manner, and seeded to Winter Rye, nine cartloads of ashes, the product of the fire, being applied as a dressing.

The next spring the piece was sown to grass, as the rye, which looked well in the fall, was badly winter-killed. I got but ten bushels of rye. The following gives the cost of the improvement:—

Dr.

To 2 men and 1 pair of oxen				ploughing off sods	1	day	$6	00
"	"	"	"	clearing	"	2 days	12	00
"	"	"	"	ploughing	"	1 day	6	00
To 1 man and 1 pair of oxen				harrowing & rolling	1	day	4	00
To 2 men and 1 pair of oxen				spreading ashes	1-2	day	3	00
Cost of seed,—rye and grass							3	00
							$34	00

Cr.	
By 10 bushels of rye, at $1.00,	$10 00
By 2 1-4 tons of hay, at 20.00,	45 00
	$55 00
	34 00
Balance in favor of improvement,	$21 00

The grass was of the first quality, and was estimated by the Committee to average two tons per acre.

To satisfy others as to the value of these ashes, I selected a piece adjoining the former, that was free from bushes, and, after the usual preparation, sowed it to grass.

The piece measured 100 sq. rods, or 5-7 of an acre, and instead of ashes eight heaping cart-loads of stable manure were applied as a dressing.

The Committee saw the grass upon both pieces, and my figures, in regard to the crops are taken from their estimate. The following is the cost of preparing the second piece:

Dr.	
To 2 men and 1 pair of oxen ploughing 1 day (nearly)	$5 00
To 1 man and 1 pair of oxen harrowing and rolling,	3 00
Carting and spreading manure,	6 00
Seed,	1 00
Value of manure,	16 00
	$31 00

Cr.	
By 28 cwt. of hay, at $20.00 per ton,	$28 00
Balance,	$3 00

Notwithstanding the great amount of opposition that I have met with from those who consider themselves authority, I still persistently adhere to my former opinions, both as regards the value of the ashes and the method of clearing.

I have given both a fair trial, extending over quite a number of years, submitted them to repeated tests, and am satisfied in my own mind that they have a value which is not by all appreciated.

As to the statement, I can furnish responsible parties who will act as vouchers should it be desired; and no inaccuracies of accounts in the main will be found.

Leaving all to your better judgment, the whole is very respectfully submitted.

MANURES.

Three statements of experiments with Manures have been received by the Chairman of the Committee. They came from Benjamin P. Ware of Marblehead, James P. King of Peabody, and Francis H. Appleton of West Peabody. The first premium, of $15, is awarded to Mr. Ware; the second, of $10, to Mr. King. Mr. Appleton's statement came after the Trustees' meeting, at which the awards were accepted, and therefore too late for a premium, but not too late for the Society to get the benefit of his experiment.

Mr. Ware's statement leads one to infer that the main point of his experiment was to determine which of two prominent commercial fertilizers is the best for his land. For that purpose the experiment was very successful, for one gave a much better crop of corn than the other. But as Mr. Ware did not test the productive capacity of the land without manure, we have no data from which to calculate the cost of the corn produced by either fertilizer.

The main point of Mr. King's experiment seems to have been to determine whether it is good economy for him to grow corn with the Stockbridge Fertilizer. His crop was large; his land was evidently in good condition without the fertilizer, but as he did not test its capacity, we cannot tell how much the fertilizer increased the crop.

Mr. Appleton's experiment was a test between the Stockbridge and Stable Manure, with present results very much in favor of the Stockbridge Fertilizer.

I think it well for practical farmers, one and all, to admit that chemical fertilizers are, and are to be, to stable manure, what coal is to wood, what kerosene is to whale oil; they are to come out of the earth to supply the wants of man, when the surface supply gets short.

The first question for every farmer to ask about chemical manures is, do I need them at present prices? Second, if needed, how determine what is needed? Some buy what is supposed to be a complete fertilizer for all plants. If they get this, they get what is needed, and probably pay for much that is not needed. Some buy a complete fertilizer for the special crop they wish to grow; if they get this, they get what is needed, and perhaps some that is not.

The Connecticut farmers, under the advice and direction of Prof. Atwater, of the Connecticut Experiment Station, are finding out what their land needs, by experimental tests with separate ingredients of plant food. By so doing, they are cultivating their powers of observation, and reducing the cost of fertilizing to the lowest point.

Prof. Atwater says: "Chemists cannot prescribe for soils as doctors do for patients." He also says: "Stable manure is a complete fertilizer. It contains all the ingredients of plant food, and its organic matter improves the mechanical condition of the soil besides. It is a standard fertilizer, and useful everywhere. To learn by what artificial fertilizer this can be supplemented, in any given case, is, as I have often insisted, best settled by experience and experiment."

Mr. Ware's experiments show that Darling's Animal Fertilizer is much better for growing corn on his land than the Stockbridge; also that the Stockbridge grow better onions than stable manure.

Mr. King's experiment shows that the Stockbridge Fertilizer works well on his land, and if he can continue to grow

such crops year after year with the same amount of fertilizer, he can get his corn cheap; but if Darling's will do as much better for him as it did for Mr. Ware, he can grow it still better with that.

Mr. Appleton's experiment is the most interesting to me, because the Stockbridge Fertilizer is brought in competition with stable manure. Mr. Ware's experiment, combined with Mr. Appleton's, shows me that I do not need either the Stockbridge or Darling Fertilizer, for I can get all the good barn cellar manure I think it good economy to use on what land I have, at $4 per cord, or less, including the cost of putting it on the land. I get it by buying hay and grain, and making milk and manure. Since the spring of 1874, I have bought between three and four thousand dollars' worth of hay and grain for making milk. I know the milk has paid for the hay and grain, besides keeping the stock of cows good, and that the labor of tending stock and manure will not amount to more than $4 per cord for the manure, after it is spread on the land. I have barn room enough for as many animals as I have acres of land, and a ready market at the door for as much milk as I care to make. These are conditions which few farmers have, but under these conditions I have no need for chemicals. If Mr. Appleton had been able to get stable manure for $4, instead of $10, the cost of manure and fertilizer would have been about equal, and the manure crop would have been 22 1-4 bushels of ears more than the fertilizer crop.

Admitting that the Darling Fertilizer would have done as much better for Mr. Appleton as it did for Mr. Ware, the manure crop would still have been ahead. The fertilizer question is a very important one to the market gardener, who has to buy all his manure, and experiments which determine the relative value of chemicals to stable manure are very valuable to all who purchase manure. There is a valuable lesson to onion growers in Mr. Daniel Carlton's plan of using barn manure one year, and Cumberland Superphosphate the next,

on the same land, and thereby growing premium onions every year.

It is safe to add that one reason why farmers need so much is because they have let so much run to waste. My advice to all is, to save all before buying any.

ANSEL W. PUTNAM, *for the Committee.*

STATEMENT OF BENJAMIN P. WARE.

The one acre of land upon which the following experiment was tried, was ploughed up four years ago, having been in grass for eight or nine years before, and was quite run out. It has a gravelly subsoil, is level, and is what would generally be considered good corn land. The first year after breaking up, it was manured with seven cords of good compost manure per acre, and planted with squashes. The second year it was manured as above and planted with potatoes. The third year it was manured with sufficient of Stockbridge Corn Fertilizer, purchased of W. H. Bowker & Co., as would produce, according to his formula, seventy-five bushels of corn per acre over and above the natural yield of the land without any fertilizer, which I considered would be forty bushels per acre, and the product was eighty-one bushels of very sound shelled corn.

The fourth and last season I divided the acre into two equal parts, with no noticeable difference in the quality or location of the land. After ploughing, I spread upon one half, which I will designate as lot No. 1, 704 lbs. of Darling's Animal Fertilizer, bought of Whittemore Bros., costing, with freight, $15.08, and 40 lbs. of Muriate of Potash, costing $1.40, both amounting to $16.48. On the other half, lot No. 2, I spread three bags of Stockbridge's Corn Fertilizer, which, according to his formula, was expected to produce at the rate of sixty bushels per acre above the natural product of the land, costing, with freight, $17.25.

The corn was planted with Ross & Co.'s corn planter, and cultivated wholly with his cultivators, without any hand labor, except pulling out a few scattering weeds that the culti-

vator failed to cover sufficiently. This system left the crop clean of weeds, and reduced the cost of cultivation very materially, which cost of cultivation and harvesting in the barn I make $19.50 for the whole acre. The product of lot No. 1 of sound ears of corn was 2597 lbs., of which it took 74 lbs. to make 56 lbs. of shelled corn, making 35 1-10 bushels of shelled corn, and 3070 lbs. of stover, at $8 per ton, would be worth $12.28, which, being deducted from the cost of production,—fertilizer, $16.48 half of cultivation, $9.75= $26.23,—would give the cost of 35 1-10 bushels corn $13.95, which is .39 per bushel. The product of lot No. 2 was 2085 lbs. of ears = to 28 1-10 bushels shelled corn, and 2360 lbs. of stover, valued at $9.44, which deducted from cost of production,—fertilizer $17.25 + cultivation $9.75 = $27.00—leaving $17.56 cost of 28 1-9 bushels, or 62 1-2 cents per bushel. Thus showing that, all other things being equal in this experiment, it cost 39 cents to grow one bushel of 56 lbs. of shelled corn with Darling's Animal Fertilizer, and 62 1-2 cents with Stockbridge's Fertilizer.

In connection with the foregoing, I also submit the following experiment, not carried out with so much exactness, but showing important results :—

With one half acre of good strong land, that had been well manured for two years, and upon which onions were sown last year, but owing to an unfavorable season the crop was a failure. Upon four-sixths of this lot I spread, after ploughing, four bags of Stockbridge's Onion Fertilizer, prepared by W. H. Bowker & Co., of whom I purchased it for $6 per bag, costing at the rate of $72 per acre, and on the rest of the lot I applied good compost manure, such as I thought would be suitable for onions, at the rate of eight cords per acre, costing, I judge, when applied, nine dollars per cord, or $72 per acre. I called upon several disinterested gentlemen to examine the crop when growing, and pass judgment upon the different parts of the piece, and all agreed with me, that, without measurement, the crop where the Stockbridge

Fertilizer was applied was considerably better than where the manure was used, the cost being the same.

In submitting the statements of these experiments on the application of manures, I desire to call your attention to the importance at the present time of carefully conducting such experiments, that we, as practical farmers, who have a living to get by our farming operations, may be able to decide first, can we afford to buy the chemical fertilizers at the prices demanded for them; and, if so, are they an economical substitute for animal or barn manure? Or if used, will our lands retain their present fertility, or increase it, by their use? These are vital questions, that can only be decided by careful experiments and for several years. And I trust the members of our Society may take an active part in solving these questions to our benefit.

Very respectfully,

BENJAMIN P. WARE.

STATEMENT OF JAMES P. KING.

The crop of Indian Corn which I offer for premium as an experiment, grew on one acre of land. The land is of a black soil, with somewhat of a clay bottom. The land was first ploughed in 1875, eight inches deep. Raised a crop of cabbage the same year, using about five cords of manure of inferior quality. In 1876 I planted the same piece with potatoes, using about the same quantity of dressing, of good quality, from my barn cellar. The present year I planted the same piece to Indian corn, using $20 worth of Stockbridge Fertilizer, a little less than is recommended per acre for corn. It was planted June 5th in rows both ways, hills three and one half feet apart, putting the fertilizer in the hill, with the following result: Cost of ploughing and harrowing, $5.00; cost of fertilizer, $20.00; hoeing with horse hoe, $2.00; cost of cultivating six times, $9.00; cost of weeding twice, by boys, $2.00; cost of seed and planting, $4.00; cost of harvesting and storing, $10.00. Weight of corn on the ear,

7650 lbs. Estimating 85 lbs. of corn on the cob to make a bushel of shelled corn, leaves 90 bushels per acre.

90 bushels of corn, at 70 cents per bushel,	$63.00
Value of stover,	20.00
	$83.00
Deduct expense,	52.00
	$31.00

The above statement I believe to be correct.

JAMES P. KING.

STATEMENT OF FRANCIS H. APPLETON.

I have this season used some of the Stockbridge Fertilizer for corn, which is manufactured by W. H. Bowker & Co., Boston, and I believe that the facts in the case, which I give herewith, will not only be interesting but useful to farmers in the county. I trust that you can publish them under some heading in the Transactions for 1877.

I have carefully surveyed the land, and computed, as accurately as possible, the labor, etc., employed, and also with equal care the results. I have also, for the sake of comparison, studied in a similar way a piece of land sown to corn and manured with stable manure.

The land was all manured the season of 1876 with stable manure, (about six cords to the acre,) for potatoes, on an inverted grass sod. This year's corn crop got an earlier and better start on the fertilizer piece than on the stable manure piece, both pieces being sown at the same time.

The question arises, as to how much each crop depended upon the manure left by the potatoes of 1876. Also how much succeeding crops will benefit by the manure left in the land from the stable manure applied this season, and whether any of the fertilizer remains in the land for future use.

The larger crop on the manured piece cost more to harvest, as is shown by the figures. In my cost the manure has to be hauled seven miles. Every farmer can calculate the compar-

ative cost of fertilizer and stable manure, which must vary according to circumstances. I have reduced the results to an acreage, and give them below :—

Total cost of raising crop, including interest and taxes, labor in planting, tending and harvesting, per acre, not including cost of fertilizer,	$36	08	
Cost of fertilizer, (Stockbridge Manure,)	23	03	—$59 11
2613.19 lbs. tops,			
5536.30 lbs. butts,			
8149.49 lbs. stover, at $8,			32 30
112 1-2 bushels corn on cob, per acre,			$26 81
Total cost of raising crop, including interest and taxes, labor in planting, tending and harvesting, per acre, not including cost of stable manure,	$38	33	
Cost of six cords stable manure, delivered on farm,	66	00	—$104 33
2655.67 lbs. tops,			
5669.62 lbs. butts,			
8325.29 lbs. stover, at $8 per ton,			32 66
134 3-4 bushels of corn on cob, per acre,			$71 67

The corn was equally good and of excellent quality in each case.

Yours very respectfully,

FRANCIS H. APPLETON.

GRAIN CROPS.

The Committee on Grain Crops were notified to view the corn crop of George L. Flook, West Newbury, and accordingly, on the fifteenth day of October, three members of your Committee met at Mr. Flook's farm, on old "Craneneck Hill," proceeded at once to the duty assigned them, and submit the following report, asking that the careful consideration of all interested in the cultivation of corn be given to

the experiments of Mr. F., and to the *facts* herewith presented.

We found a field of nearly three acres of excellent corn, growing upon a gravelly soil, on the southeasterly slope of the hill. One acre of this field was entered for the premium. Mr. Flook stated that the land was broken up last spring, and upon one half acre a compost of hen manure and barn-yard scrapings, valued at $10, was spread broadcast and harrowed in. The other half acre was treated with $10 worth of the Stockbridge Fertilizer, in the same manner. A few rows adjoining received a dressing of ashes. Here the difference was plainly visible, and showed greatly to the disadvantage of the ashes, for not only was the crop very much *smaller*, but the quality of the corn was also *inferior* to that raised upon either the compost or the Stockbridge formula.

The corn was tarred, to prevent the depredations of the birds, and planted in checks three and one-half feet apart, each way, care being taken never to exceed six kernels to the hill. It should be stated that the compost was applied to the lower, and the Stockbridge formula to the upper, and consequently earlier and dryer end.

Your Committee selected one rod, an average, from both the lower and upper ends, husked and weighed the corn, remarking that the crop on the upper end was filled out better and also dryer.

The corn raised upon one rod, with the Stockbridge formula, weighed 59 1-2 lbs. The corn raised upon one rod, with the hen manure compost, weighed 59 lbs.

The Society's standard has been from 72 to 80 lbs. to the bushel. This would give in the one case over 131 bushels, and in the other over 118 bushels of shelled merchantable corn per acre—an unprecedented crop. We were not satisfied with this result, and believing that it requires more than 80 lbs. of corn on the ear to the bushel, we determined to test the matter *thoroughly*. Mr. Flook, entering earnestly into the question, hung the corn over the kitchen stove, where it remained two weeks drying. At the request of Messrs.

Ordway and Day, I examined and again weighed the corn on the day it was shelled, Oct. 29th, and the result *proves* what your Committee expected it would—the corn was dry, hard, flinty, and fit to grind.

The shelled corn raised upon one rod with Stockbridge formula, weighed 36 3-4 lbs., (a shrinkage of 22 3-4 lbs.,) 105 bushels per acre.

The shelled corn raised on one rod with hen manure compost, weighed 36 lbs., (a shrinkage of 23 lbs.,) 102 6-7 bushels per acre, making Mr. Flook's *actual crop* nearly 104 bushels per acre, instead of 131 bushels, as tested by the standard of 72 lbs. per bushel. It will be seen that the shrinkage from the gross weight when harvested, to the net weight when merchantable, is nearly 40 per cent., and we hope our Trustees will hereafter make the standard 90 lbs. per bushel.

The Committee were unanimous that Mr. Flook's crop was well worthy of the first premium. Mr. J. J. H. Gregory's crop was viewed by Mr. Akerman, and the result [see his statement annexed] being so satisfactory, we award him a gratuity of eight dollars.

When we take into consideration the enormous amount of corn exported in 1876—50,910,532 bushels,—nearly seventy per cent. greater than the previous year,—and also the fact that New Hampshire last year raised 2,029,000 bushels of corn, and Massachusetts only 1,150,000,—would it not be well for the "Old Essex Society" to endeavor to increase this all-important crop, by offering *more* than one premium for corn?

We award to E. P. Robinson, of Hamilton, for his Rye Crop, the premium of $10. For particulars, see his statement annexed.

Committee—Horace F. Longfellow, Hanson Ordway, John Day, Joseph Akerman.

STATEMENT OF G. L. FLOOK.

The crop of 1875 and 1876 was grass; the nature of the soil was gravelly, low; broken up in the spring of 1877; ploughed to the depth of eight inches; spread on about ten dollars' worth of Stockbridge Manure and about ten dollars' worth composted of hen manure and barnyard. Cost of planting, harrowing, and ploughing, seven dollars; amount of seed, one peck of eight rowed yellow corn, worth twenty-five cents; cultivated twice and hoed three times. Cost of cultivation, ten dollars; cost of harvesting, eleven dollars and a quarter. Amount of fodder I estimate worth twenty dollars. Amount of crop, 104 bushels.

STATEMENT OF J. J. H. GREGORY.

Previous to 1875 the land was in grass, and had been for many years. In 1875 it was broken up, being at the time badly run out. The crop of that year was Drumhead Cabbages, the ground being well manured with glue waste and leached ashes broadcast, with ground bone and hen manure in the hills. The crop of 1876 was Potatoes, which received a liberal manuring with fish waste, glue waste, potash, and superphosphate, the two latter in the drills. It was ploughed both last fall and spring, about seven inches deep. Previous to the spring ploughing, eight cords, half of barn manure and half a compost of waste fish and soil, at the rate of one part of fish to three of soil, were spread broadcast. Four hundred and fifty pounds of muriate of potash were harrowed in, and seven hundred and fifty pounds of the pomace of the castor oil bean were scattered in the drills. The drills were made three and one-half feet apart, and the corn dropped a foot between the kernels. The entire cost of preparing the ground and planting was about $12.00. Cost of the manure: barn manure, $32.00; fish waste, $15.00; muriate of potash, $12.00; bean pomace, $7.00. The corn was planted May 15th, but owing to devastation from the crows, a considerable portion of it had to be replanted at various intervals up to

the middle of June, which, as every farmer knows, is unfavorable to the crop, the late planted not yielding as well, that first planted overgrowing and overshadowing it. The variety was a new kind, named the "Compton," originated by Mr. Compton of Pennsylvania, by planting the abnormal ears which sometimes grow in place of the spindle. The seed for the acre cost about $5.00, and the planting of it $2.00. The corn was cultivated four times, at a cost of $5.00, and hoed and weeded at an additional expense of $5.00. It required no thinning. Owing to great press of other work, it was not harvested until the close of October, having suffered considerably from the depredations of crows and rats. In September it was topped, and the stover secured in good condition. The cost of gathering and husking was $10.00. The yield of the acre was two hundred and two bushels of ears, of which only twelve were inferior in size and quality, the remainder making the handsomest lot of ears I ever saw grown on an acre of ground; they were remarkably large, many of them being twelve and fourteen rowed, and were almost uniformly filled out to the tips. Many of the stalks had three good sized ears on them. Some of the ears were glazed in seventy days from the date of planting. The stalks were quite tall, and suckered freely, making the stover of more than ordinary value. Large as was my crop, it was much below that for which Mr. Compton was awarded the Conrad Wilson prize, by a committee of intelligent gentlemen. An objection to the Compton Corn is the size of the cob, which is a partial offset to the size of the ear, and to its habit of filling out to the butt, its earliness and productiveness.

It will be seen that the cost of the acre of corn, charging, as customary, one-half the cost of the manure to the crop, was $69.00. At 87 cents a bushel for northern corn, the value of the crop would be $87.00. If to this $25 is added for the value of the stalks, which abounded in suckers, and were unusually tall, the value of the crop would be $112.

JAMES J. H. GREGORY.

[CERTIFICATE.]

Middleton, Nov., 1877.

I hereby certify that the 202 bushels of Compton Corn entered by Mr. Gregory, grew on one acre of land, as measured by me.

HENRY B. WINSLOW.

STATEMENT OF E. P. ROBINSON.

DR.

To Ploughing, Harrowing and Sowing 4 acres Rye,	$48 00
To 250 bushels Ashes, unleached,	44 50
To 12 bushels Rye,	12 00
To Reaping, &c.,	5 00
To Threshing, by hand,	12 00
To net proceeds, or profit,	46 93
	$168 43

CR.

By 80 1-2 bushels Rye,	$68 43
By 5 tons Rye Straw,	100 00
	$168 43

By actual measurement the field contained four acres, or so near that as to authorize it being so called. This land has not had any manuring for at least seven years, and was so demoralized that less than one ton of hay was cut on it in 1876. This last fact led the writer to break it up and sow rye. The statement shows a net profit of $46.93. This would be a handsome per cent. on investment, (and is,) but should be carried on more largely.

Hoping to hear from you soon, and in proper time, I am

Yours, E. P. ROBINSON.

ROOT CROPS.

The Committee went first to the "Cochichewick Farm," in North Andover, owned by Mr. J. D. W. French. Potatoes, Mangolds, and Ruta Bagas were the crops offered. There were no other entries for the same kind of vegetables. These crops were all good, though not a very extra yield. The potatoes were large, better to sell than to keep. The Committee award to Mr. French the premium of $10 for each of his entries.

The science which Mr. French has brought to bear upon the surroundings, and conditions under which he farms, has enabled him to unite the ornamental and practical, the artistic and needful, the landscape beauty of good clean cultivation with the solid satisfaction of good crops and handsome and productive cattle. The farm and the country seat are well joined together in "Cochichewick Farm."

Daniel Carlton, of North Andover, comes next on the list. Here we saw a very good crop of Onions, for which the Committee award him the Society's premium of $10.

The conditions under which Mr. Carlton farms are very different from the surroundings of Mr. French; and yet Mr. Carlton's agricultural science has enabled him to unite his farm with a genuine New England farmer's home, a home in which the sons seem to be content to remain and work with the father. If any readers of this report have not a clear and comprehensive idea of what a "farmer's home" means, let them get Dr. Loring's Portland speech and learn what it means.

The next visit was to the farm of Mr. Rufus Goodwin, Ayer's Village. Here we saw a good crop of Onions, but not as good as Mr. Carlton's.

Mr. Goodwin's farm is very different from either Mr. French's or Mr. Carlton's. It is a village farm of ten acres, but with agricultural and mechanical science, Mr. Goodwin is uniting and welding together,—machinist fashion,—all that needs to be united in farm, garden, and home.

Mr. H. A. Merrill, of North Beverly, entered Cabbages. By selecting the best one-half acre in a four acre lot, he showed the Committee a fair crop of cabbages for a dry season. With more rain at the ri ht time, and a good market, his crop might have been very profitable. for he has reduced the cost of growing to a very small sum. He had premium cabbages last year, and grew $161.50 worth with $17.25 worth of manure.

The conditions under which Mr. Merrill farms are well calculated to teach economy of production. Growing vegetables for the Boston market, on land rented by the year in North Beverly, makes economy of production a necessity, if one expects to add satisfactory net cash returns to the pleasure of growing cabbages and carting them to Boston.

The Committee give Mr. Merrill the credit of having done well under the circumstances; but they were not at liberty to give him the premium, because Mr. J. J. H. Gregory, of Marblehead, entered a much better crop, and to him the Committee award the premium of $10.

The conditions under which Mr. Gregory farms are very different from those under which most farmers work, and it is very fortunate for all purchasing seeds from him, that he has been able to bring to the conditions under which he works the practical skill which enables him to produce very superior parent seed stock, from which to grow his seeds. It is perhaps well that he is not compelled to study economy of production as closely as some of us, for half fed stock of any kind are not likely to be first class producers.

Mr. French, in his statement, has called attention to the manure value of Mangold tops. It is well for all growing mangolds to solve, to their own satisfaction, how best to utilize this value. My experience with them has led me to think that, when fed under the right conditions, instead of being a "very indifferent" food, they are, on the contrary, a very superior food for milch cows.

I infer, from German experiments, and tables given us by Prof. Atwater, of the Connecticut Experiment Station, that the tops of all the beet family are very rich in mineral, or ash ingredients, and also in nitrogen or albuminoids. Being rich in both of these makes them very valuable as manure; being rich in albuminoids makes them valuable as food. Green clover is good manure, it is also good food, and though the organic matter in beet leaves is much less than in clover,—7.7 in 100 lbs. of the leaves, to 20.3 in 100 lbs. of clover,—the ratio of albuminoid to carbo-hydrates is nearly the same,—1 to 2.37 in the leaves, and 1 to 2.33 in the clover. I think a pound of the organic matter that is in mangold tops will make more milk than a pound of organic matter in green clover, for, four years' experience in soiling for milk, has led me to think, that, other things being equal, the more water in the form of sap there is connected with the organic matter, the more milk I can get from a given amount of the organic matter. There is no water like sap water for making milk, and therein lies, as I think, the great value of root crops,—tops and bottoms. In feeding the tops, we lose but a small per cent. of their manure value—less than they charge at the bank to discount a note for the same time; I can collect two dividends from the plant food, which is the farmer's trading capital. In the mangold tops, before they are ready for plant food, if ploughed in, I can feed them in October, put out the manure and sow rye, feed the rye in the spring, use the manure to grow fodder corn, and feed that by the time the leaves ploughed in are decayed enough to become plant food. There are facts connected with the problem of collecting dividends from plant food that are not generally understood. When I grow mangolds, my plan is to begin to harvest early, so that I can have some time in which to use the tops. I top them in the field and while standing; the tops can be taken off much better than after they are pulled. Put the tops, as taken off, into a large basket, and from the

basket into a cart. After as many rows are topped as we want leaves for a day or two, then the roots are gathered; that clears the ground, so that the cart can get near for more leaves. As the tops must be taken from the roots, it is but little labor to get them to the barn, and into the farmer's chemical laboratory—the cow's stomach,—and extract the milk from them, thereby changing the refuse at once into good plant food.

Committee—Ansel W. Putnam, Chairman; Henry W. Foster, Willis P. Sargent, Andrew Mansfield, A. P. Fuller.

STATEMENTS OF J. D. W. FRENCH.

POTATOES.

The following is the account of my Potato crop, entered for premium:—

The land used for this crop, previous to 1875, had *never* been in cultivation, but was a piece of low meadow land, covered with wild grasses and bushes. In the summer of 1875 the whole meadow was drained with tile drain running into an open ditch, stoned at the sides, which extended the entire length of the meadow.

In the fall of that year the land was ploughed for the first time. In 1876 the crop was corn. Stable manure was used at the rate of six cords to the acre. The soil is of a peaty nature, mixed with sand. The land was not ploughed in 1876, but horse hoed. In the spring of 1877 it was cross ploughed, that is, ploughed in the opposite direction from the ploughing of 1875. The depth of furrow was eight inches. The planting took place May 4th. The drills were furrowed out three and one-half feet apart, and planted with *small* potatoes fifteen inches apart in the drills. The quantity of land entered is one-half acre. Finished digging and housing potatoes August 24th.

Dr.	
To seed, six bushels *small* Potatoes,	$ 3 00
To ploughing and harrowing, two days,	3 00
To planting and weeding, four days,	6 00
To manure, two and one-half cords,	20 00
To harvesting, two and one-half days	3 75
	$35 75
Cr.	
By 140 bushels saleable Potatoes at 60 cts.,	$84 00
" 20 " small " at 25 cts.,	5 00
	$89 00

Profit on 1-2 acre, $53 25.

In the above no account is made of the tops, or of the value of the manure for future crops.

Boussingault says, in his "Rural Economy," that, from experiments made, he found that the Potato tops from an acre of ground might be equal to six or seven hundred weight of that manure presumed to be dry. See also statement on Mangolds.

MANGOLDS.

I herewith present the account of my Mangold crop entered for premium:

This crop was grown on part of the same meadow as described in statement on Potato crop.

Variety, Long Red. Sowed seed May 12th by machine, in drills forty inches apart. The plants were thinned out to twelve or fifteen inches apart. Extent of land, 1-2 acre. Roots put in cellar October 20th.

During the month of September, the land suffered severely from drought, so that the crop is not as large as usual. Thirty-six tons per acre have been raised on my farm, whereas this year the crop is only twenty-six tons. The salt was broadcast, and the hen manure put in along the drills. The barn

manure was spread on the whole piece. It is my practice to leave the tops on the land to be ploughed in.

My experience agrees with that of Boussingault, that they should only be given to cattle in cases of necessity. He states that "it is generally much better to bury them in the ground immediately after the crop is gathered. If they be very indifferent food, they are, on the contrary, excellent manure, superior in quality even to the best farm dung;" also, that the leaves of the beet from an acre of ground, are equal to six or seven hundred weight of that manure in a state of dryness; but in another place he says that an acre produced 85 3-4 cwt. of green, and 9 3-4 of dry leaves. His average crop is only 10 1-2 tons, probably about half what it is in this country.

Composition of Dry Leaves:—Carbon, 38.1; Hydrogen, 5.1; Oxygen, 30.8; Azote, 4.5; Salts and Earths, 21.5; equaling 100.0.

Dr.	
To seed 1 1-2 lbs.,	$1 12
Ploughing and harrowing 2 1-4 days,	3 37
Ridging and sowing 1 1-2 days,	2 25
Weeding and thinning, 6 days,	9 00
Barn manure, 3 cords,	24 00
Hen manure, 3 bushels,	1 50
Salt, 2 bushels,	.50
Harvesting, 5 days,	7 50
	$49 24
Balance to credit,	59 51
	$108 75

Cr.	
By 435 bushels Mangolds, at 25 cents per bushel, or 13 tons,	$108 75

RUTA BAGAS.

I present the following statement of Ruta Baga crop entered for premium :—

This crop was grown, as well as the Mangolds, on part of same meadow as the Potato crop entered for premium. Sowed seed June 16th; this proved to have been much too early, as the crop went strongly to tops. Drills forty inches apart, and plants thinned out to twelve or fifteen inches apart. Harvested Oct. 27th. The quantity of land occupied by this crop is 1-2 acre.

Dr.	
To seed, 1-2 lb.,	$ 25
Ploughing and harrowing, 2 1-4 days,	3 37
Ridging and sowing, 1 1-2 days,	2 25
Weeding, 1 3-4 days,	2 62
Barn Manure, 3 cords,	24 00
Stockbridge Fertilizer, 1 bag,	6 00
Harvesting 5 days,	7 50
	$45 99
Balance to credit,	32 01
	$78 00
Cr.	
By 260 bushels Ruta Bagas, at 30 cts., or 7.8 tons,	$78 00

SEEDLING POTATOES.

Your Committee on Seedling Potatoes would report that on invitation of Mr. R. Goodwin, of Haverhill, (Ayer's Village,) it visited his farm, and heard his statements under oath regarding a seedling potato offered by him for premium. The Committee, all of whom were present, examined the seedling offered and other seedlings, and compared them in connection with the Early Rose, especially the seedling offered for pre-

mium, with which it is very nearly allied in looks and taste. Your Committee also had the pleasure of tasting this seedling boiled, and of comparing it with other potatoes cooked in the same manner. Your Committee saw this potato taken from the hills in several localities, and was much pleased with the enthusiasm of Mr. Goodwin in this department of agriculture, and also in the apparent honesty shown in presenting his different statements.

Mr. Goodwin makes this statement in writing to your Committee, under date of Sept. 17, 1877: "In 1873 I planted potato seed from the ball of the Orino potato planted beside the Early Rose. Near them were the Peerless, Davis Seedling, Riley Red, and State of Maine. I got from the seed twelve or fifteen different seedling potatoes. From the one I offer for premium I raised six potatoes in 1873. I planted the six potatoes in 1874, and the yield was one-half bushel. In 1875 raised eight bushels from one-half bushel, on ground manured with common stable manure, three cords on acre, cultivated in. In 1876 planted about six bushels, and raised from them ninety-five bushels, manuring as the previous year. This year I planted seventeen pounds of the seedling, cut in one-eye pieces, and sprouted them in boxes, planted them on May 5th, and the yield was six bushels, with but few small potatoes. Seventeen pounds of the Early Rose, of the same size, treated the same way, yielded four bushels of smaller potatoes and a larger amount of small ones." He says the yield of some planted by him and not sprouted was heavier.

Mr. Joseph How, under date of Sept. 13, 1877, writes that, "In the spring of 1876 Mr. Rufus Goodwin gave me two of his seedling potatoes, which I planted, and gave him the result. Last spring I planted the proceeds of last year's crop by the side of the Early Rose. The amount of the crop was a very little in favor of the Early Rose. I was not quite satisfied with the experiment. The most convenient place I had to plant them was in the garden, where it was partially shaded, and I think the Early Rose had a little the best

chance. I think, therefore, that my experiment the present year should have but little or no influence in the case. As to the quality of the potatoes, we have cooked but few of them, and thus far find but little or no difference between them and the Early Rose."

Mr. T. J. Goodrich states in writing that he planted this year "a few of Mr. Goodwin's potatoes. As to earliness and yield I think they are equal to the Early Rose, and better in quality."

Mr. Chandler, of Andover, under date of Sept. 17, 1877, writes that, "In 1876 I raised ten pounds from one potato given me by Mr. Goodwin. This year planted four pounds in the field, had 125 pounds of good market potatoes, not weighing little ones. Planted four pounds of Early Rose by side of them, did not cover much more than half the ground that the others did; had 84 pounds; could not say in regard to their being earlier than the Early Rose, but they cook as well or better than the Early Rose. They are very smooth and fine, but look so much like the Early Rose that it would be hard to pick them out if put side by side."

George Cogswell, Chairman of your Committee, would state that on the evening of July 20th last, Mr. Goodwin called on him at his Riverside Farm, where he was stopping for the summer, and gave him, perhaps a peck, of his seedling potatoes. He stated that these potatoes were planted on the 16th of May, 1877, being two months and four days. These potatoes were fine looking, cooked well, and were of excellent quality,—as good or better than the Early Rose in its best days.

In conclusion your Committee would state that they regard the seedling potato, presented by Mr. Goodwin, of even size, smooth and fine looking, and good in cooking qualities, and according to the testimony presented, earlier than the Early Rose, which it much resembles. In fact the likeness was so great that the Committee hesitated in recommending a premium, and would advise that the decision be referred to next

year, and that in the meantime Mr. Goodwin place in the hands of two of your Committee, such as he might be inclined to select, to be by them tested, some of these seedling potatoes, for the purpose of reporting thereon; and, further, your Committee would suggest that in making up the Committee for another year, a majority of the Committee of the present year be placed thereon.

All of which is respectfully submitted.

GEO. COGSWELL, *Chairman.*

THE EXHIBIT OF MANUFACTURES AT THE FAIR.

Among the varied interests exhibited at the hall during the Essex Agricultural Society's Fair, the one great attraction was the manufactures of Lawrence and vicinity. The marked improvement in the quality, finish, texture, and variety of products, was quite evident since the last exhibition some twelve years ago, and places Lawrence in the front ranks for producing fabrics not excelled as to quality and superb finish. The varied products will bear me in the assertion that these fabrics are what the people require, and fully equal to any foreign production suitable for lady or gentleman to wear.

The Arlington Mills is an establishment devoted almost entirely to the production of ladies' wear; the only exception is the manufacture of Lasting for Shoes. Their exhibit consisted of ten qualities of Alpaca; three qualities of Twilled Brocade; one quality of Matallasse; three qualities of Twilled Bunting for Dresses; one quality of Lasting for Shoes. The product of this corporation yearly is $225,000. Annual product, yards, 5,000,000.

The Atlantic Cotton Mills, as its name implies, manufactures first-class plain cotton goods in different grades, which are found in all our home markets; also shipped largely to foreign countries.

Everett Mills product consisted of Cottonades, Denims, Cheviot Shirtings, and Dress Goods. Samples of all were placed on exhibition, all of which were much admired by the Committee, and the general expression was that they were suitable for the use of the most fastidious.

Pacific Mills exhibited an assortment of their every day production, of Printed and Dyed Cottons and Worsted Goods, comprising Worsted Goods, Cashmeres, Merinos, Alpacas, Poplin Lustres, Serges, Printed and Dyed Cottons, Percales, Corded Jaconets, Organdies, Lawns, Cretons, Prints, &c.

Pacific Mills goods are too well known to call for a description. There is not a dry goods store in the land where Pacific Mills productions are not known. They are staples such as are required by the people. Pacific Mills are known in Europe by their productions. There is scarcely a maker of textile fabrics in England, France, or Germany, that caters for the United States market, that does not know and respect the productions of these mills. There is no establishment in Europe devoted to the manufacture of textile fabrics so extensive as the Pacific Mills of Lawrence. In this connection it is pleasant to know that the enterprise has been a financial success from the beginning. The Company leave no effort untried to elevate their employes, morally, physically, and intellectually.

Lawrence Woollen Mill exhibited some very fine Shawls, Cloths, Cassimeres, Coatings, Fancy Cloakings, Suitings, Repellants, and Opera Flannels. These cloths are made from fine wool, and are finely finished fabrics.

Pemberton Company made a very fine display of Cotton and Woollen Goods in variety. This mill was erected upon the same spot where one fell in January, 1860, and has, since starting, run to its full capacity upon a large variety of products in both wool and cotton. Through the excellent management of David Nevins, Esq., its President, who is also at the head of the selling house of Nevins & Co., who sell its products in all markets, the mill has maintained a high repu-

tation for the style and quality of the great variety of fabrics it produces. Through good times and bad times, buoyancy or depression of trade, it has been kept constantly in operation, giving employment to a large number of operatives, and a living to those dependent upon them.

In its display at our exhibition, there were fine All-Wool Goods for ladies' wear, in all shades of color, Bourette and Matallasse Goods of both Wool and Cotton, for ladies' dresses, stout, closely-woven Cottonades for men's wear, Shaker Flannels, Shirting Flannels, Cotton Flannels, with many other varieties skilfully and tastefully manufactured.

The Washington Mills made an extensive exhibit of Ladies' and Gentlemen's wear, which was admired alike by Committee and the public, all uniting that quality and finish fully equalling any foreign production. The Cloakings and Suitings were the finest of fabrics. The variety exhibited consisted of Shandons in fancy suitings of fine wool; Trosachs and Inverness fancy suitings from American and Canadian wool, in black and blue and fancy colors; Vienna Coatings, Black Worsted Cloth for Sontags, with worsted face and woollen back; Gilderslieve Superfine Worsted in black and numerous fancy colors; Matallasse Cloakings for ladies' wear, made from worsted for face, and mohair and wool backs, in black, blue, brown and green shades of color; Chantilly Superfine Cloaking for ladies' wear, in fancy weave and fancy colors, superfine worsted on the face, and fine wool backs; Blue Flannels and fine cloths from XX American and Australian wool; Extra Bay State Shawls, from Super and XX wools in various styles and colors; Eider Shawls, in imitation of Camel's Hair Shawls; also Serge in five shades; Extra Cashmere in seven shades; Winter Cashmere in seven shades; Poplin in four shades; Cretons in five shades; Alpaca, 22 inch and 6-4, ten shades; Wool-Dyed Brilliantines in seven shades; Wool-Dyed Serge in eight shades; Fine Serge, six shades; Washington Fancies in six styles; Costume Cloth in seven shades; Polonaise Cloth, two styles; Fabrique Brou-

sette in seven shades, two different styles; Twilled Biege, five shades; Biege Fancies in six shades, three styles; Diagonals, four shades, three different styles. Total, one hundred and thirty pieces, in one hundred and four shades and in thirty different styles of Dress Goods.

Smith and Dove Manufacturing Co., of Andover, is one of the successful enterprises of this vicinity, whose products are known at least over the entire country. Their exhibit consisted of Flax, Undressed Flax, Dressed Flax Sliver, Robing, Yarns and Carpet Yarns, Shoe Thread and Machine Thread, Engine Hose Twine; Warp and Filling for weaving Linen; Fire Hose; and Bookbinders' Twine. To witness the different stages of manufacture, from the raw to the marketable product, was very interesting to all.

B. S. Hale & Sons' manufactory, of Lawrence, is a new industry in our city, and they are producing in their line some superior goods in workmanship and finish. The goods exhibited were Laid Linen Fish Lines, braided of linen and silk; Laid Waterproof Lines; Braided do.; Bleached Chalk Lines; Silk and Cotton Covered Wire, Copper and Iron, for electrical purposes; Silk and Worsted Covered Flexible Roll Cord; and Patent Asphalt Covered Copper and Iron Wire, for Waterproof and Insulation.

Methuen Company. The display of Jute and Cotton Goods made by this Company, was one of exceeding interest, especially of the Jute goods. The manufacture of Jute goods into various fabrics, is a comparatively new one to this country. Heretofore it has been largely confined to Scotland, in Great Britain, where the fibre is admitted free of duty, and it enters into a large variety of the cloths manufactured there.

The fibre is grown in the swamps of India, and being planted, gathered, and put up for market, by the very cheap labor of natives, is not so costly as wool or cotton. The manufacture of this fibre into cloth was introduced into Methuen at the Methuen Company's Mills several years ago, by David Nevins, Esq., and through his indomitable will, perse-

verance, and energy, it has been successfully wrought into many kinds of useful fabrics. To make this Jute manufacture thoroughly successful in this country, it only needs that we should have the same advantage as Great Britain, namely, that the raw Jute should be brought into this country free of duty; it now has to pay a large one. Samples of the fabrics made at Methuen were shown at our fair. Draperies for halls and parlors, Carpets in bright or subdued shades of color, Canvas for U. S. Mail Bags, Grain Bags, Cotton Bagging, together with many other fabrics of Jute, made one of the most interesting features of the display of manufactures, and was doubtless a new revelation to most who visited the hall during the exhibition.

This mill also displayed excellent Cotton Goods,—Cotton Flannels, Tickings, Awning Stripes, and Skirtings,—with other kinds, all equal to those manufactured in this or any other country.

Wm. D. Lamb, *for Committee.*

Lawrence, Oct. 27th, 1877.

TREADWELL FARM.

The Committee on the Treadwell Farm respectfully submit the following report:—

The buildings received a second coat of paint in April last, and now have a very neat and tidy appearance. They will not need repairs to any considerable extent for many years to come. Further improvements have been made by Mr. Philbrook in clearing bushes from the highly ornamental pine grove, and along the borders of a brook within the boundaries of the farm, and also from a small pond that was formerly filled with unsightly brush. This, with the improved condition of the farm buildings, and the clean culture bestowed

upon the farm, give it a very neat and thrifty appearance; excelled in that particular by very few farms in the County.

It may be interesting to those who have followed the three years' experiment that closed last year, to know that lot No. 1, which was fertilized three years ago with Russell Coe's Superphosphate, showed little or no effect from it this year; the growth of grass being about the same as on lot No. 4, where no fertilizer was used. Crop not worth mention. Lot No. 2, that was fertilized with Brighton Abattoir Fertilizer, compared favorably with lot No. 3, which had an application of barn-yard manure.

The growth of grass was fair, showing unmistakably the effects of the application made three years ago.

This year 67 1-4 cords of barn-yard manure, and $115.50 worth of Stockbridge Fertilizer have been applied to the farm.

The products of the farm were: 20 barrels of apples, 9 bushels cranberries, 225 bushels of potatoes, 415 bushels of mangolds, 250 bushels of carrots, 265 bushels of turnips, 20 bushels of green peas, 3 1-2 bushels of beans, 20 bushels of onions, 850 bushels of corn in the ear, 44,084 cucumbers, 4560 cabbages, three cart loads of pumpkins, 12 tons of English hay, 20 tons of meadow hay, 5 tons Hungarian hay.

An experiment with Stockbridge Fertilizer was tried upon five acres of very thin poor pine plainland, that had not been manured for very many years, and had not virtue enough to support a sod of any kind before ploughing, which was done in the autumn of 1865, and sown with winter rye. It produced but a very small growth of rye last year, showing how very poor the land was. Stockbridge's formula for corn fertilizer sufficient to produce fifty bushels of corn per acre, was applied to the five acres, and to two of the five one bag per acre in addition was used in the hill, which seemed to increase the crop fully one third. The product of the whole five acres was 420 bushels of ears of corn.

Benjamin P. Ware, *for the Committee.*

NEW WINTER APPLES.

There has been offered for several years the liberal premium of one hundred dollars for a new kind of winter apples equal to the Baldwin or Roxbury Russet. We suppose it means for late keeping as well as for quality. We well remember the discussion that took place among the trustees about offering this large premium. It was said by some of the oldest and most experienced members, that, in their opinion, apple trees would in time deteriorate and become less productive, and the fruit inferior in quality, and the importance of new kinds of late keeping apples was particularly alluded to. If it is a fact that apples deteriorate, as above stated, it is wise to look for new kinds. Notwithstanding the large premium that has been offered, we believe there has been no application for it.

We well remember the old orchards and the great quantity of apples they produced in our early days, nearly all of which were made into cider, as there was but little or no market for them within a reasonable distance.

There were several kinds that originated in our neighborhood, that were of superior quality which would not have dishonored the tables at our County Fair. The origin of those trees, some of which are yet standing, would, we think, date back about 150 years. The Methuen Pippin, the Bean apple, the Orange apple, the Red apple, and other kinds, are all now in existence in our locality, but have so deteriorated that they are now considered of but little value.

The Roxbury Russet, we suppose from the name, originated in Roxbury; as to the time, we have no knowledge. Among our earliest recollections, were the Russet trees on our father's farm, one of which was sufficiently large to bear several barrels of apples. And in imagination we can see the tree loaded with large fair fruit, yellowed with golden russet tinged with red from the rays of the sun; and when kept till spring, they tasted quite as well as they looked on the tree.

There was the Rhode Island Greening, which came, as we have been informed, from Rhode Island, which produced, like the Russet, a very beautiful fruit, but now, like the Russet, has greatly deteriorated. There was but little encouragement at this early day to cultivate apples for market, as Salem was the only market, and the manner of conveyance was such that it was not easy to convey them there. The most of the marketing was done at this time on horseback. We well remember seeing the horses loaded with sacks, containing the products of the farm, such as butter, cheese, eggs, poultry, and other light articles, and sometimes grain was carried on horseback. The good women also sometimes went, carrying the products of the dairy, the spinning wheel and loom. These companies would naturally remind one of the children of Israel carrying corn in sacks out of Egypt.

It will be seen at once that apples would be an inconvenient article to carry on horseback, and as there were no wagons, our father adopted the following plan for carrying his apples to market. He took the top of his chaise from the carriage, then placed boards on the axle and crossbars, on which he placed his bags of apples and other things he carried to market.

As to the price of apples at this early day, we recollect hearing our father say that he got a barrel of flour for four bushels of apples. He sold his apples for two dollars per bushel, and paid eight dollars per barrel for the flour.

A man who is our senior in years, related the following incident: He says the first wagon he recollects ever seeing, was a new one hired by his mother before it was painted, to go to Salem to market, and he went for the first time with her, she having been previously accustomed to go to market on horseback. Among other things carried to market at this time were some checkered handkerchiefs of her own manufacture, for the soldiers in the service of the war of 1812.

From the above, and our own recollection, wagons were not much used until about this time, 1812 or 1813.

The Sawyer apple originated in Methuen, on the bank of the Merrimack, and on the farm of the late Aaron Sawyer, which gave name to the fruit, the origin of which will date back probably as far as those above named. There was an important and protracted trial at which we were present, between Mr. Sawyer and the Essex Company, about the value of this tree, which was then in a decayed state, and would have soon been likely to die a natural death. The Essex Company, by building their dam at Lawrence, flowed the land where the tree stood, and large damage was claimed for its value. Many witnesses were called and much time was consumed to prove the large amount of valuable apples it had previously produced, and consequently the great value of the tree. We have no doubt, from the amount of the award of the referees, that it had considerable influence in their decision. The tree we suppose was unusually large, a prolific bearer, and of superior autumn fruit. It now appears, from those that were grafted from it within our knowledge, that the fruit is depreciating like other varieties of about the same age.

The Runnels apple, or iron apple, as they are sometimes called, were formerly prolific bearers, and were considered profitable apples to cultivate. Their value consisted in their late keeping and good cooking qualities, but not for the table.

We remember many years ago being on the farm of the late John Barker, of North Andover, who was then known to be famous for his late-keeping winter apples, and his care of keeping and marketing them.

A tree was pointed out to us of the Runnels variety, from which it was said that he got fifty dollars for a one-horse load carried to Boston. He carried twenty-five bushels, and sold them for two dollars per bushel. Whether the twenty-five bushels were all the tree produced, we were not informed.

The Currier apple originated in our neighborhood, probably within the present century, and on the farm of a Mr. Currier, which gave name to the apple. They are juicy, of good flavor; in form like the Porter apple, but not quite as large; a little striped with red, and will keep longer than the Baldwin, and the tree is an uncommonly great bearer.

We were informed by Mr. Gorden, the present owner, that he picked from the original tree in one year, about twelve years ago, seventeen barrels, which he sold in the winter or spring for $5.50 per barrel at the cellar, amounting to the handsome sum of $93.50, not including the apples that dropped from the tree. A few years previous to this time there was said to be gathered from the tree 28 barrels at one time, not including those that dropped from the tree.

As to the price for which they were sold, we were not informed. They have been grafted to some extent in our vicinity, and a neighbor who had a large orchard of mostly Baldwins, said to us that if his orchard had been Currier apples instead of Baldwin, it would have given a much larger income in the last few years than it has. The reason he assigned, was they have often produced a good crop, when the Baldwins have failed, and as they keep better than the Baldwins they usually bear about the same price.

The President apple originated in Pelham, N. H., within the present century,—an excellent fall apple and good bearer.

The Hubbardston Nonsuch,—we know not when or where they originated,—is a prolific bearer, of superior quality, suitable for use in late fall and early winter.

As to the origin of the Baldwin Apple, we have the following information from the Hon. Josiah Newhall of Lynnfield: The Baldwin apple, he says, was found growing wild in the town of Wilmington, on the farm of a Mr. Butters, more than a hundred years ago. They were known as the Butters apple, also known as the Woodpecker apple, the woodpecker having perforated the bark. Being disseminated by Col. Baldwin, they were called the Baldwin apple. For many

years the Baldwin apple we think has been more extensively cultivated in this County than any other winter apple, if not more than all other winter apples put together, and its good qualities are such and so well known, that no recommendation is necessary.

The best apples are not always the most profitable. We have many times had apples highly recommended, have grafted them, and when they came into bearing, have grafted them over again in consequence of their being unproductive and not so profitable as other varieties.

Some varieties produce better fruit in some localities than in others. Better Roxbury Russets are produced near the seashore than in the north part of the County, although they are in our opinion far inferior to what they were sixty or seventy years ago. The Rhode Island Greening has greatly deteriorated with us, but is said to do well in some other places. The same may be said of the Hunt Russet.

The Northern Spy was said to be a late-keeping winter apple. It is a good apple, but with us not profitable to cultivate. On some trees they rot on the tree, on other trees they are of inferior quality.

We again quote from Gen. Newhall's letter: He says the English Permain was brought to this country by the early settlers. In his early life he set out several trees of that variety, which produced fruit for a few years, then the fruit began to decline and become worthless. He also mentions the Russet Permain,—Codlin—Catshead—Redstreak &c., which were popular apples one hundred years ago, but are now worthless.

He further says he believes the apple tree is no exception to the law of nature in regard to every living thing which has its youth, maturity, and decline. From our own experience and observation, we fully agree with our venerable friend, and we think the opinion he has formed from his long experience should have weight. If it is a fact that apples

deteriorate in quantity and quality, as we think they do, then it will be a great blessing to posterity if new varieties can be procured of superior quality, particularly of late keeping winter apples, as we think we are most deficient in that class of fruit. The apple crop is of immense value, not only as a luxury, but as a necessary healthful food, and the fruit continues fresh nearly the whole year. If a new variety of apples can be obtained like the Roxbury Russet of seventy years ago, the fruit large and fair, rich and juicy, a prolific bearer, which would come into the market after the Baldwin in late spring and early summer, they would be of great value; and also a variety to take the place of the Baldwin, should they decline, as other varieties have done.

Several years ago we sowed a small nursery nearly all from the seed of the Baldwin apple. Being desirous, if possible, of procuring a new and valuable variety of fruit, we selected about one hundred of the most thrifty, stocky, broad-leafed trees, the most of which were removed to the field for an orchard, the others remained in the nursery, all to remain ungrafted until they bore fruit. In due time they all produced fruit. What was the result? There was not a Baldwin, nor any one like a Baldwin, but all were greatly inferior to the various varieties that we now have. From the above experiment, and as nearly all the young trees that are transplanted are budded or grafted before bearing, how can we procure new varieties of superior fruit? From the aforesaid history of the Baldwin apples, and the knowledge that we have of their being disseminated over the community, we think they must have remained in obscurity for many years, with their great value concealed from public view.

Is it not possible that there may be a tree in some retired place equal to the Baldwin, or to what the Roxbury Russet formerly was, which a large premium would bring to public notice? Or may it not be possible that a superior quality of late keeping winter apples may be found in our markets,

which a large premium would lead some one to trace to their origin, and, if worthy, procure grafts therefrom?

There are other enemies of the apple to contend with, which we think are worse than those above named. We mean the insects in the tree and in the apple. They are not in some respects unlike some of the human species. They work in the dark, and cannot be effectually met. The canker worm and caterpillar can with care and labor be destroyed. But what can we do with the borer? One says, dig them out; another says, we wash the trees and destroy their eggs. This may be done to some extent in small orchards of young trees, but to destroy them in large orchards of large trees is much easier said than done. We believe the borer is doing much more damage in our orchards than is generally supposed. They not only perforate the body of the tree, but the branches also, which causes premature decay.

There are now many difficulties to contend with that did not formerly exist. The canker worm and caterpillar existed then as now. The canker worm ravaged the orchards in the latter part of the last century, and were killed by a late frost, and the apples were also killed at the same time; and it was said that the loss of the apples was not considered a calamity, as the destruction of the worms more than balanced the loss of the apples. They appeared again in the early part of the present century. Many remedies were applied for their destruction, but nothing proved effectual, except tarring the trees. We well remember assisting in tarring our father's trees. The custom then was to mix blubber with the tar, heat it, and apply it warm every day late in the afternoon, which proved effectual. We think if ink were applied every day, as we then applied tar, it would be more effectual, as we have seen the insects passing over the ink the second evening without trouble.

We think the destruction of birds has had much to do with the increase of insects, as many kinds of birds live mostly on them.

How to prevent the depredation of the apple worm is a difficult subject to determine. Sometimes they are very injurious to the fruit, other seasons we get a good crop, nearly perfect. The cause of the change is hard for us to understand.

Atmospheric influences sometimes operate on the crop. The year 1874, it will be recollected, was an apple year, particularly for the Baldwin. The crop was generally large, and the price of apples low. In our locality there was a large blossom, which looked healthy and strong. When in full bloom, a blight came over them which gave the blossom and foliage an unhealthy appearance; many of the leaves curled up and dropped off, and many of the trees did not recover from the shock during the season. There was a small crop of apples of very inferior quality. Some orchards not far distant had a full crop of good fruit. In 1876 some of the orchards that failed two years before produced a full crop of nearly perfect fruit, with few wormy apples.

The present year there is almost a total failure. We are aware that a great crop of Baldwins could not be reasonably expected. There were, however, some orchards that blossomed tolerably well. What was the cause of the failure? It was not the canker worm nor caterpillar, for in many of our orchards there are none.

It was said by one of old, "Except the Lord build the house, they labor in vain that build it; except the Lord keep the city, the watchman waketh but in vain." Although we may cultivate our orchards well and protect them as well as possible against insects, yet without the smile of Him who rules the elements, our crops may fail.

Now in closing, we would recommend to those who have good orchards to cultivate and protect them as well as possible against insects, and we trust in most cases they will, with the blessing of a kind Providence, be rewarded.

JOSEPH HOW, *Chairman.*

ESSAYS AND REPORTS.

The Committee on the award of premiums for Essays and Reports find the same difficulty in making a decision that so often besets the other Committees called upon to pass judgment in cases where there does not seem to be much to choose. Only two essays were offered this year,—one by Ansel W. Putnam, of Danvers, upon "The Comparative Value of Crops as Food for Cattle;" and the other by James J. H. Gregory, of Marblehead, upon "The Angle Worm." As regards general merit, there may not have been much to choose between these, but that of Mr. Putnam,—which seemed to be more of a statement of experiments than what is understood by a formal essay,—appeared to be of the most practical turn, and the Committee therefore gave it the preference, without assigning it to the rank of such essays as they understand to be contemplated in the award of a first premium. Mr. Gregory's essay is interesting as a newspaper article or as a paper to be read before a natural history society. It may also be useful as tending to awaken the farmer's attention to the consoling probability that worms and insects may have a legitimate use in the economy of nature, and that this side of the question may be worth a more careful hearing than farmers usually give to it. Beyond this, the utility of the treatise, as a help to farming, was not clear to the Committee. No first premium was awarded; but the second, of $10, was given to Ansel W. Putnam, for his essay on crops as food, and the third, $8, to J. J. H. Gregory, for his essay on the angle-worm.

There was not a great deal to choose between those reports that appeared most worthy to come within the range of a premium. A report of intrinsic value, taken as a whole, would not, of necessity, be entitled to a premium, especially where the main value resides in the different statements of the farmers who contribute to it, and where these statements have not been specially utilized, by the writer or compiler of the report, with some new and fresh thought or conspicuous-

ly useful deduction throwing new light or valuable suggestion upon the subject in hand. Very likely this Committee may not have made the most judicious discrimination; but they finally decided upon the following awards: First premium, $10, to Jos. S. Howe, Town Teams; second, of $8, on the deterioration of the apple, to Joseph How; third, of $6, to T. C. Thurlow, on peaches, grapes, and assorted fruit.

Committee—N. A. Horton, Salem; D. E. Safford, Hamilton, Hamilton; Charles P. Preston, Danvers.

ESSAY ON THE COMPARATIVE VALUE OF CROPS AS FOOD FOR CATTLE.

BY ANSEL W. PUTNAM, OF DANVERS.

The feeding value of crops depends upon the conditions under which they are fed, as well as upon the character of the crops. There may be conditions under which a ton of meadow hay, worth in market $15, has a higher feeding value than a ton of upland hay, worth in market $25.

Fodder crops are now classified according to their ratio of albuminoids to carbo-hydrates. Animals to be fed are divided into two classes,—those at work and those at rest. Animals that are being fatted, or that are giving milk, are classed as work animals. The fodder tables, published by Professor Atwater, of the Connecticut Experiment Station, which are founded upon German experiments, show that it is not good economy to feed animals at rest with food rich in albuminoids; such food should be saved for the work animals.

The results of a winter's experience with these tables may interest some members of the Society. The summer of 1876 was very hot and dry; the hay crop and crops for soiling were short, and when winter came there was very little in the barn. Whether to sell stock or buy food was the question to be answered. After a careful study of the tables, and of the

market price of the different kinds of fodder, it was decided to buy food. A comparison of the tables with the price list showed that carbo-hydrates would be furnished at much lower rates in bog-meadow and salt-marsh hay than in good upland hay, and that albuminoids were lowest in shorts and cotton seed meal. A car load of shorts was bought at $16 per ton, and four tons of cotton seed meal at $26 per ton. Meadow hay was bought at $8 per ton, in stack on the meadow; some fine salt hay at $12; some early cut black grass at $16. For two months our milch cows were fed a mixture of bog-meadow, salt hay, and black grass, at an average cost of $12 per ton, and our dry cows a mixture of bog-meadow and salt hay, at an average cost of $10 per ton. Cows that were giving from 15 to 18 quarts of milk a day, were fed 8 lbs. of shorts, 6 lbs. of corn meal, and 4 lbs. of cotton seed meal each per day. Cows that were giving less milk, had a smaller allowance of grain. The dry cows had no grain or roots with their $10 hay. I never have had cows give more milk than they gave on that $12 hay, and the dry cows kept in good condition; our horses were fed the same hay, and did well on it. Between two and three months there was no upland hay in the barn. Towards spring meadow hay and good salt hay were scarce; the roads were bad, and some baled hay was bought; it was not first quality, was over-ripe, and it did no better than the other mixture, though it cost more. Late in the spring I was in a neighbor's barn; he had some river meadow hay that he asked $15 a ton for, and some early cut upland hay that he asked $25 for. He said, "the meadow hay would do for dry stock, but there was no milk in it; but the upland hay would make milk." I told him I would take a small load of the meadow hay. It weighed 1500 lbs.; cost $11.25. I fed it from the wagon, and fed no other hay while it lasted, which was just one week. All the hay sixteen cows and three horses had for one week was that 1500 lbs. of meadow hay, and they had all they wanted of that kind of hay. They produced $36 worth of milk from that $11.25

worth of hay, and the grain that was put with it. There were three or four dry cows in the barn at that time, but the cows that were giving milk gave enough to pay for all the hay and grain that was eaten for the week by all the stock,—horses and hens included.

The merit of meadow hay lies in its bulky character, and in what may be called its stand-by capacity. A daily ration of 20 lbs. of meadow hay, will, I think, make larger paunches and keep fuller stomachs, than 30 lbs. of early cut upland hay; this is why it is valuable to feed with large quantities of grain, and to animals at rest it does not take as much to keep them full.

Why is it that dry cows and young stock, classed as animals at rest, are often so poor in the spring, when fed on salt marsh and meadow hay? It is because, though classed with animals at rest, they have no opportunity to rest; an animal cannot rest unless it is comfortable. On one of the coldest mornings of last winter, I went to a neighboring town for hay. At the barn where I loaded I saw cattle eating the same kind of hay that I was after; they were very poor, and looked as though they were growing poorer. Why? The barn was very open and cold—nearly as cold as out doors,—the hips and sides of the cattle were covered with frozen manure; they were curled up and shivering with the cold. It made my teeth chatter to look at them; and when I asked for some water for my horses, they told me that their stock drank out of a hole back of the barn, but horses not used to it would not drink it, they would bring me some from the house. It is not strange the stock was poor, but it is strange that they were alive. Now look at the conditions under which I fed the same kind of hay. The same morning, with the thermometer below zero out of doors, the one hanging behind our cows stood at forty degrees above zero; the cows were clean, and they had clean and dry beds to lie on; they had an opportunity three times a day to drink as much good well water as they wanted,—temperature of the water about forty-six

degrees,—and they had the privilege of drinking in the barn, where it was warm. The cows were comfortable, *they were at rest*, and under these conditions the $10 hay kept them in fair condition, at a cost of ten cents per day.

Last year the writer advised those accustomed to feeding salt and meadow hay with the result of poor stock in the spring, to buy cotton seed meal, to help utilize the carbo-hydrates in the poor hay. But after another year's experience and observation, my first advice to all such is, keep your stock warm, and give them all the good water that they need, and see if the quality of your hay is not good enough to keep animals that are comfortable, *and at rest*, in fair condition.

A knowledge of the comparative value of clear corn meal to cob meal, and also of the difference in feeding value of our round home grown corn and the flat Southern and Western corn, is very important at this time, to help farmers settle the question whether it is best to grow corn. German experiments show that 71 per cent. of clear corn meal is digestible, and that 52 per cent. of corn cobs is digestible matter. If we allow 74 lbs. of ears to give 56 lbs. of clear corn, 100 lbs. of ears will give 75.6 lbs. of corn, 24.4 lbs. of cobs; 53.6 lbs. of the corn, and 12.6 lbs. of the cobs are digestible, making 66.2 lbs. of digestible matter in cob meal, to 71 lbs. in clear meal, or about as 13 to 14. It is well to bear in mind that most of the digestible part of corn cobs is carbo-hydrates, and that to get the full value of cob meal it needs to be fed with other food rich in albuminoids.

Many are ready to admit that 100 lbs. of cob meal, made from round corn, is worth as much to feed as 100 lbs. of clear meal made from flat corn. Some, after changing from one to the other, back and forth for several times, claim that the same quantity by measure of cob meal is worth as much as the clear meal bought at our mills. There are 64 qts. in 100 lbs. of clear meal, and 86 qts. in 100 lbs. of cob meal. If a quart of our Northern cob meal has the same feeding value that a quart of clear Western meal has, then at the present

time 100 lbs. of cob meal are worth $1.80. My experience has led me to put the value of 100 lbs. of ears in the corn crib, when dry enough to grind, at the price of meal per bag at the mills. It costs us 20 cents per 100 lbs. to get our cob meal ground. I think 100 lbs. of it worth, for making milk, 20 cents more than a bag of the average meal we get at the mills.

The value of the cobs, and the difference in quality between the round and flat corn, are important items in making up statements of the cost and value of the corn crops grown in our county, and yet these items have generally been overlooked. Take for example the statement of James P. King for this year. He reports 7650 lbs. of ears, allows 85 lbs. of ears for a bushel, and calls a bushel worth 70 cents, 90 bushels $63.00. If I had such a corn crop as that, I should say, 7650 lbs. of ears worth in crib, $1.35 per 100 lbs., cash value of corn $103.27. This may seem too high to many, if they have not carefully watched the practical working of cob meal. But I think a large majority of the farmers in Essex County who have grown corn this season, will admit that four quarts of cob meal are worth as much as three quarts of the clear meal mills; with that data we have 7650 lbs. of ears, worth in the crib $1.15 per 100 lbs.; cash value of the corn $87.97.

It is well for the farmers of Essex County to know the full value of their meadow hay, butt-stalks, and corn-cobs. It is also well for them to know *the exact conditions under which they can realize full value for all their crops*, for, *economy in using is as important as economy in producing.*

ESSAY ON THE ANGLE WORM.

BY JAMES J. H. GREGORY, OF MARBLEHEAD.

Twenty-four years ago, in the year 1853, being too unwell to attend to any business, I gave a portion of my time during the spring and summer to the study of the common angle or

ground worm, with the view of determining his place in agriculture. I was led to this in part from a desire to learn something about a little animal about whom there were but very few facts on record; and in part to ascertain whether the general sentiment of the community, and one to which even so eminent an observer as the late Prof. Agassiz seemed to give sanction, namely, that it was not a friend to agriculture, was correct.

I selected for special observation portions of my father's garden, located in Marblehead, Massachusetts, on the sea-coast. Much of it had been under cultivation off and on for a long series of years, and for the twenty years previous in a high state of cultivation. The soil was a strong loam, underlaid at about three feet in depth with hard pan. Selecting an area containing about a square rod, on which for several years the vegetable refuse of a large family had been thrown, and into which, as it accumulated, it was at times dug, I aimed to determine the weight of worms the soil could be made to produce under very favorable circumstances. With this end in view I turned over the soil with a six-tined fork several times during the season, each time carefully collecting all except the very smallest of the worms. The sum of the different collections, when weighed, showed that this rod of ground had yielded a crop of worms at the rate of somewhat over 12,000 pounds, or six tons to the acre. The entire grounds, of about half an acre, were very rich in the worm crop, but not in the same proportion as the piece experimented on. A part of the worms so collected were fed to fowls, whose appetites appeared almost insatiable; and a part, after they were dead, were used as manure for hills of corn, in rich old garden soil. When used as manure, they had turned to a watery jelly, saturating the earth in which they had been kept while collecting, into a pasty, soggy mass. I could not see any beneficial effects on the corn crop; still it seems probable that there must be some manurial value even in such low organizations; for the conditions of even the lowest

forms of animal life imply the presence of fertilizing elements, such, for example, as nitrogen; and again, it would be contrary to the economy which is evident throughout the Divine plan in creation that an animal, though individually small, yet in the aggregate making so vast a bulk, should perform its functions and die beneath the surface of the earth and not feed vegetation. If it were so in this instance, I think it would be the one exception. In the experiment tried, the land was previously in such high condition, that it is doubtful if any of the commercial fertilizers would have shown any effects on the crop; perhaps for the same reason my worm manure failed.

To ascertain how often during the growing season worms come to the surface, I selected a square foot of ground, near the edge of a low embankment, where the soil was rather dryer than that of the average of the garden. From early spring until the hottest weather of summer had passed, I visited this every morning to collect the earthy borings that the worms had deposited during the night. To my great surprise I found by these borings, that, with but two exceptions in the very hottest portion of the summer, they came to the surface every night during spring and summer. The collected mass of borings for the season was about a quart in bulk, sufficient to raise the surface of the garden if deposited all over it in the same proportion half an inch in height.

And here it may be in place to describe briefly the structure and habits of the angle worm. Naturalists tell us that it is hatched from an egg. When developed, as we find it in our gardens, it is a most simple structure, quite low in the scale of animal life, appearing to be but little more than a series of connected rings with a tube running through them. At one end of the tube is the mouth. If we draw our finger up and down the worm, we will usually feel a degree of roughness when drawing it up toward the head. Naturalists explain this by the presence of hair. These hairs are so arranged and inclined as to be somewhat prehensile in their

character. If we watch a worm in the evening, when most of its body is stretched out of its hole, we will see it sweeping around, having the hole as a pivotal centre, until it has come in contact with some bit of refuse matter, such as a fallen leaf or blossom, which, sticking to the slimy exudation that always covers the body of the worm, it draws into its hole. The common opinion that the angle worm feeds on growing plants, which leads housekeepers to take special pains to kill any that may be found in their flower pots, and gardeners at times to apply strong alkaline solution to kill those found in their grounds, my observation and experience have led me to believe is a great mistake. Their place in the Divine economy appears to be the same in relation to vegetable matter as that of the vulture family to animal matter,—to remove and devour dead and waste vegetable refuse.

To test the thoroughness of their work in this direction, towards the close of an afternoon in spring I spread three dozen abortive pears, that had been shed from the tree at the time of blooming, over a piece of ground about a foot square. In the morning I found that every one of them had been removed, and all but three or four which could be seen at the mouths of the holes of the worms, had entirely disappeared. A study of a worm hole is quite suggestive of the probable office of the ground worm in the economy of nature. We find it winding its way down through the surface into the subsoil, in a line which appears to deviate from a perpendicular only so far as stones or hard substances render it necessary for the little excavator to make it so. The depth of the holes depends mostly on the character of the subsoil, and its distance from the surface. On my grounds I found them three and four feet in depth, penetrating some ways into the hardpan.

One great object in agriculture is to aerate the soil, to the end that the air may so act on its elements that they may be converted into plant form. When we consider that the little quiet worker bores its holes by the hundreds of thousands to

the acre, far down into the subsoil, we have some measure of our indebtedness to him. If next we examine these passage-ways of the worm, by which it descends to its subterranean abode, we will find that the portion of them below the surface soil can be to a greater or less degree traced by their dark lining, which may be surface soil carried down on the slimy body of the worm in his descent,—or excrementative matter, perhaps part of each. In either case it must enrich and improve the subsoil for agricultural uses.

There is a third office of these numberless galleries, which must not be overlooked; as it is a fact that their little tenants come to the surface about every night of the growing season, then it must follow that the galleries are open in times of drought to admit the air which then is heavily loaded with moisture, which must be deposited on the cooler interior. Again, these myriad openings probably serve as conductors to convey the water of summer showers into the subsoil, and thus hold in numberless tiny reservoirs that which otherwise would be wasted in the hurried dash on a dry, dusty surface, which characterizes most of our summer storms.

If then the angle worm is a friend to agriculture, the fact may have some bearing on the manure question,—for those manures which abound most in vegetable matter are favorable to his growth, and vice versa. Among those favorable to his development, barnyard manure would doubtless rank the highest, while the guanos, phosphates, and the various other chemical fertilizers, cannot any of them be favorable, while some must be prejudicial to his development.

To one who has been accustomed to the abundance of the angle worm in highly cultivated gardens, the fact is a striking one that in Northen New England there are locations where it is very scarce, and yet in these very localities, if once brought there, and put in land where the house waste is thrown, they will rapidly increase and become as plenty as I have ever seen them elsewhere. The fact that the worm comes to the surface during the nights of summer, is alluded

to in the old adage, "it is the early bird that catches the worm;" the robin may be seen to pull them up any morning by those who rise as early as the early bird. As has been stated, the ground worm is very low in the scale of animal life,—having but little besides the extremity of a tube for a mouth, while it can neither see nor hear, and its sense of taste, if it has any, must be of the simplest. If we take a lantern and go out at night, after a summer shower, we will find the ground in old gardens abounding with them, stretched sometimes to a foot in length over the surface, and all in slow motion. We may bring the light as near them as we please, provided they do not feel the heat of the flame, and they show no consciousness of its presence; we may clap our hands, or make other noise, provided we cause no vibration of the ground, and still they show no consciousness; but if we now stamp with the foot, or in any way cause a vibration of the ground, simultaneously every one within reach of it will instantly draw into his hole. If they are very numerous, a singular effect of this sudden, instantaneous withdrawing is to give an impression that the earth has moved under our feet, and cause a slight feeling of giddiness. While they appear to be so insensible to lamp light, (I have not exposed them to it for any length of time,) why do they retire at the approach of day? Can it be that natural light exercises any chemical action on their bodies? Those in the vicinity of any strong manure I have noticed are not as large as the average, but are more intensely red, and sometimes quite yellow in color. Can it be that these are of a species or variety different from the common angle worm?

In the heat of summer by day they retire to the bottom of their holes, as the boys know who dig for them in vain for bait, (dig for them late in the evening, boys, when they come up to the surface,) and there they may be found, rolled into a ball, or tied up into a knot, (probably they were the first of knot-tyers.) Doubtless this is to prevent the too great evaporation of the slimy moisture which appears a necessity

for their existence. Though cold to the touch, yet they need a degree of heat to preserve life, and, doubtless for this reason in part, they descend below the reach of frost. As soon as the frost breaks ground, they come to the surface, and should the gardener in early spring be in doubt as to whether his grounds are fully thawed, he has but to turn up a forkful of earth, and the presence or absence of the angle worm will settle the question; for if he is at the surface then there can be no icy barrier remaining between him and his winter home. At one time, while collecting some late in the fall, I threw them into a shallow box, in which were a few handfuls of earth, and left them out over night. It was cold, and the surface of the ground was frozen about an inch in depth. In the morning I found them all gathered and intertwined into a round ball, about the size of a child's fist. I inferred that their object was to endeavor to maintain the low temperature necessary for their existence, and the form they had chosen was certainly the very best possible for that end.

RESOLUTIONS ON THE DEATH OF MEMBERS OF THE SOCIETY.

At the Annual Meeting at Lawrence, September 25th, 1877, Maj. Ben: Perley Poore, of West Newbury, offered the following Preamble and Resolutions, which were unanimously adopted:

Whereas, the Essex County Agricultural Society has lost by death, since its last annual meeting, a number of valuable members, who have occupied conspicuous positions, viz: George W. Boynton, of Georgetown, Edward H. Little, of Newbury, Samuel Moody, of West Newbury, Thomas J. Clark, of Salisbury, Moses P. Payson, of Rowley, Henry A. King, of Peabody, Andrew Dodge, of Wenham, and Thomas E. Payson, of Providence, Rhode Island:

Resolved, That the Society remembers with pride the devotion to agricultural pursuits which characterized our deceased associates, and expresses its sincere regret at their loss.

Resolved, That a copy of this preamble and resolutions be communicated to the respective families of our deceased associates.

E. H. PAYSON, TREAS'R, IN ACCT. WITH THE ESSEX AGRICULTURAL SOCIETY.

1876.	Dr.	
September.	To balance of former account rendered	$123 15
October.	To Bank Dividends in October	$452 40
	To Essex Railroad coupons	8 17
	To State Bounty	600 00
	Amount refunded by State	214 61
	To amount of receipts at Fair in Danvers, per account of Committee	1,405 26
1877.		
February 2.	To Dividend of Gas Co	18 00
March 15.	To Essex Railroad coupons	21 00
April 3.	To Bank Dividends for April	488 90
July.	To Dividend of Gas Co	18 00
August 24.	To net proceeds of sale of six shares of Gas stock	598 50
September 7.	To Rent of Farm one year	500 00
	To amount of unclaimed premiums	103 50
	To amount received from new members	108 00
	To Essex Railroad coupons	21 00
		$4,680 49

1876.	Cr.		
September.	By amounts of Premiums and Gratuities awarded by the Trustees	$1,688 75	
1877.	additional	249 50	$1,938 25
	By expenses of Exhibition at Danvers, paid by Committee	1,054 66	
	By expenses of Exhibition paid by Treas'r	208 68	1,263 34
	" Treadwell Farm		501 18
	" Printing		564 61
	" Secretary's account		243 13
	" Record Books, 5 50; Tags, 35 00		40 50
	" Interest on money borrowed		28 83
	" Rent to Athenæum		25 00
	By balance to new account		75 65
			$4,680 49

E. E.

EDWARD H. PAYSON, Treasurer.

Salem, September, 1877.

FUNDS BELONGING TO THE SOCIETY.

5 shares First National Bank, Danvers	$375 00
16 shares Warren National Bank	1,595 40
8 shares National Exchange Bank, Salem	800 00
18 shares First National Bank, Salem	1,914 66
12 shares Mercantile National Bank	1,226 50
23 shares Merchants National Bank, Salem	1,189 50
15 shares South Danvers National Bank	1,471 25
5 shares National Revere Bank	585 87
42 shares Asiatic National Bank	1,281 25
18 shares Salem National Bank	2,000 00
Essex Railroad Bonds, par	700 00
Cash on hand as above	75 65
	$13,215 08
Last year this item was	13,880 33
Loss, including $89 25 on Gas Stock	$665 25

In 1875 this item was $14,426 20.

In 1874 " " $15,020 30.

The undersigned has examined the within account of receipts and disbursements of the Treasurer, and also his statement of the funds belonging to the Society, (showing a balance in his hands of $75 65) and find the same correctly cast and duly vouched.

C. KIMBALL, for Committee of Auditors.

SALEM, Dec. 3, 1877.

OFFICERS OF THE SOCIETY,

FOR 1877-78.

PRESIDENT.

BENJAMIN P. WARE, of Marblehead.

VICE PRESIDENTS.

GEORGE B. LORING, of Salem.
JAS. J. H. GREGORY, of Marblehead.
DANIEL H. STICKNEY, of Groveland.
THOMAS K. LEACH, of Topsfield.

TREASURER.

EDWARD H. PAYSON, of Salem.

SECRETARY.

CHARLES P. PRESTON, of Danvers.

HONORARY TRUSTEES.

JOSEPH HOW, of Methuen.
ALLEN W. DODGE, of Hamilton.
WILLIAM SUTTON, of Ipswich.

TRUSTEES.

Charles C. Blunt, Andover;
Thos. H. Balch, Groveland;
John H. Cheever, Manchester;
William Cogswell, Bradford;
Caleb Childs, Marblehead;
W. H. B. Currier, Salisbury;
Wm. B. Carlton, Haverhill;
John Danforth, Lynnfield;
Alonzo B. Fellows, Ipswich;
James Flint, Middleton;
Henry W. Foster, Beverly;
Ariel H. Gould, Topsfield;
Bennett Griffin, Gloucester;
A. E. Goodwin, Merrimac;
J. Z. Gordon, W. Newbury;
Joseph S. Howe, Methuen;
Samuel Hawkes, Saugus;
B. F. Huntington, Amesbury;
Joseph Hale, Rowley;
Milon S. Jenkins, N. Andover;
James P. King, Peabody;
Oliver P. Killam, Boxford;
Aaron Low, Essex;
Jarvis Lamson, Hamilton;
Wm. B. Morgan, Wenham;
John W. Marshall, Rockport;
Sidney F. Newman, Newbury;
Sherman Nelson, Georgetown;
Francis P. Putnam, Danvers;
John P. Palmer, Swampscott;
Geo. W. Russell, Lawrence;
John L. Shorey, Lynn;
Geo. W. Simmons, Nahant;
Horace C. Ware, Salem;
J. Otis Winkley, Newburyport.

NEW MEMBERS—1877.

Henry V. Buxton, Peabody;
David L. Foster, Beverly;
Hayden A. Merrill, Beverly;
W. A. Keleher, Lawrence;
Francis R. Appleton, Ipswich;
H. E. Holt, Bradford;
Perry B. Knowlton, Essex;
Richard Newell, W. Newbury;
Chas. W. Ordway, W. Newb'y;
Paul T. Winkley Jr., Newb'p't;
Doane Cogswell, Bradford;
Geo. W. Ellis, Hamilton;
Geo. Buchan, Andover;
J. Adams Ilsley, Georgetown;
J. D. Drew, Lawrence;
Edwin H. Barnard, Andover;
James B. Smith, Andover;
John L. Smith, Andover;
Frederic Gilman, Lawrence;
S. K. Johnson, Andover;
Solomon Fuller, Danvers;
John E. Gale, Haverhill;
Geo. G. Creamer, Hamilton;
M. B. Merrill, W. Newbury;
C. J. Norwood, Ipswich;
Moses A. Bailey, Andover:

Geo. C. Foster, Andover; Geo. B. Bradley, Methuen;
Jos. E. Buswell, Methuen; M. B. Ames, Lawrence;
E. A. Fiske, Lawrence; Otis Mann, Newbury;
John O. Wiley. No. Andover; Daniel Tenney, Newbury;
John Mitchell, Beverly; Edward Flynn, Lawrence.
Virgil Dow, Methuen;

☞ Any citizen in the County may become a member by paying the sum of three dollars to increase the permanent funds of the Society, and he will receive a certificate of his membership from the Secretary. No fines or assessments are ever imposed. Members are entitled to the free use of the Library, and a copy of the Transactions each year. All ordained Ministers of the Gospel residing in the County, and editors of newspapers, published therein, are entitled to the privileges of the Library.

LIBRARY.

The LIBRARY is established at the Plummer Hall, Essex Street, Salem, where members can obtain books under the following Regulations:—

1. Each member shall be entitled to take from the Library TWO VOLUMES, on signing a receipt for the same, and agreeing to be accountable therefor.

2. No member shall keep any book more than two weeks, after being notified (by the Librarian) that the same is wanted by another member.

3. All books belonging to the Library shall be returned on or before the 15th of November in each year; that the same may be examined and the condition of the Library reported to the Trustees.

4. Any member who shall neglect or refuse to conform to these regulations, shall thereby forfeit the privilege of taking books from the Library.

LIST OF PREMIUMS, &c.

FAT CATTLE.

William Peters, North Andover, first premium, $12 00

BULLS.

J. D. W. French, North Andover, Ayrshires, two years old and upwards, first premium, $12 00

George B. Bradley, Methuen, Ayrshires, two years old and upwards, second premium, 6 00

Doane Cogswell, Bradford, Ayrshires, under two years, first premium, 6 00

Charles Perley, Boxford, Ayrshires, under two years, second premium, 4 00

J. D. W. French, North Andover, best bull of any breed, with five calves of his stock not less than one year old, Ayrshire Bull "Fitz James," premium, 30 00

Z. C. Wardwell, Groveland, Jersey Bulls, first premium, 12 00

F. R. Appleton, Ipswich, Jersey Bulls, second premium, 6 00

W. A. Russell, Lawrence, Holstein Bulls, under two years, first premium, 6 00

W. A. Russell, Lawrence, Holstein Bulls, under two years, second premium, 4 00

WORKING OXEN, BULLS, ETC.

George A. Butters, Methuen, Oxen, first premium, $15 00

B. H. Farnum, North Andover, Oxen, second premium, 12 00

Moses A. Bailey, Andover, Oxen, third premium, 10 00

George F. Mason, Andover, Working Steers, four years old, first premium, 10 00

John P. Foster, North Andover, Working Steers, four years old, second premium, 6 00

W. A. Russell, Lawrence, Working Bulls, first premium, 15 00

MILCH COWS.

W. A. Russell, Lawrence, best grade Cow, first premium,	$12 00
W. A. Russell, Lawrence, best grade Cow, second premium,	6 00
W. A. Russell, Lawrence, best Holstein Cow, first premium,	12 00
W. A. Russell, Lawrence, best Holstein Cow, second prem.,	6 00
J. D. W. French, North Andover, Ayrshires, first and second premiums, ($12. and $6.,)	18 00
Charles Perley, Boxford, for best Milch Cow, special prem.,	25 00

HERDS OF MILCH COWS.

J. D. W. French, North Andover, first premium,	18 00
G. W. Russell, Lawrence, second premium,	12 00

HEIFERS.

J. D. W. French, North Andover, thoroughbred Ayrshires in milk, first and second premiums, ($12. and $6.)	$18 00
J. D. W. French, North Andover, thoroughbreds not in milk, first premium,	6 00
Charles Perley, Boxford, thoroughbreds not in milk, second premium,	4 00
J. D. W. French, North Andover, Calves, first premium,	5 00
Charles Perley, Boxford, Calves, second premium,	3 00
Geo. B. Bradley, Methuen, Native or Grade Heifers under four years, in milk, first and second prem., ($12 and $6.)	18 00
Daniel Carleton, North Andover, Native or Grade Heifers, under four years, not in milk, first premium,	6 00
W. B. Carleton, Haverhill, Native or Grade Heifers, under four years, not in milk, second premium,	4 00
W. B. Carleton, Haverhill, Calves, first premium,	5 00
Levi Emery, Lawrence, Jersey Heifers in milk, first premium,	12 00
George W. Russell, Lawrence, Jersey Heifers in milk, second premium,	6 00
Levi Emery, Lawrence, Jersey Heifers not in milk, first prem,	6 00
F. R. Appleton, Ipswich, Jersey Heifers not in milk, second premium,	4 00
F. R. Appleton, Ipswich, Calves, first premium,	5 00
Geo. W. Russell, Lawrence, Calves, second premium,	3 00
W. A. Russell, Lawrence, Holstein Heifers not in milk, first premium,	6 00
W. A. Russell, Lawrence, Calves, first premium,	5 00

TOWN TEAMS.

North Andover, Horse Teams, first premium,	$30 00
Methuen, Horse Teams, second premium,	15 00
Andover, Ox Teams, first premium,	30 00
Methuen, Ox Teams, second premium,	15 00

STEERS.

Joseph Kittredge, North Andover, Yearlings, first premium,	5 00
J. H. Farnum, North Andover, gratuity,	3 00

STALLIONS.

William Keleher, four years old and upwards, first premium,	$18 00
George W. Russell, Lawrence, second premium,	12 00
M. B. Merrill, West Newbury, third premium,	10 00
George W. Rogers, Salem, three years old, first premium,	10 00
H. E. Holt, Bradford, second premium,	8 00
Dr. Wm. Cogswell, Bradford, Stallion with Colts of his own stock, special premium,	30 00

BROOD MARES.

Justin E. Bradstreet, Bradford, first premium,	$18 00
Albert Titcomb, Rowley, second premium,	12 00
Abiel Wilson, North Andover, third premium,	10 00

FAMILY HORSES.

John E. Gale, Haverhill, first premium,	$18 00
S. K. Johnson, Andover, second premium,	12 00
H. E. Holt, Bradford, third premium,	10 00

FARM AND DRAFT HORSES.

Joshua Roberts, Gloucester, first premium,	$15 00
S. F. Newman, Newbury, second premium,	12 00
J. O. Winkley, Newburyport, third premium,	10 00
R. Welch, Methuen, fourth premium,	6 00

PAIRS OF DRAFT HORSES.

T. O. Wardwell, North Andover, first premium,	$15 00
E. P. Perley, Danvers, second premium,	10 00

COLTS—FIRST CLASS.

J. O. Winkley, Newburyport, best four year old,	$12 00
E. T. Northend, Newburyport, best three year old,	10 00
B. S. Barnes, Boxford, second premium,	5 00

COLTS—SECOND CLASS.

Daniel Tenney, Newbury, two years old, first and second premiums, ($8. and $3.,)	$11 00
Otis Mann, Newbury, one year old, first premium,	8 00
J. J. Downing, Andover, second premium,	5 00

SWINE—FIRST CLASS.

Virgil Dow, Methuen, Breeding Sow, first premium,	$10 00
M. Birmingham, Salem, Boar, second premium,	6 00
H. G. Herrick, Lawrence, Breeding Sow, second premium,	6 00
Levi Emery, Lawrence, litter of Pigs, first premium,	6 00
C. T. Emerton, Peabody, " " second premium,	4 00

SWINE—SECOND CLASS.

Benj. P. Ware, Marblehead, Essex Boar, first premium,	$10 00
J. D. W. French, No. Andover, " " second premium,	6 00
Daniel Carlton, North Andover, Breeding Sow, first premium	10 00
Joseph Kittredge, No. Andover, Breeding Sow, second prem.,	6 00

SHEEP.

Joseph Kittredge, No. Andover, first premium best flock, Appleton premium,	$25 00
F. R. Appleton, Ipswich, best flock Cotswold, first premium,	10 00
Henry G. Kimball, Bradford, Yearling Buck, first premium,	8 00
F. R. Appleton, Ipswich, flock of four lambs,	4 00

PLOUGHING—DOUBLE TEAMS.

Benjamin H. Farnham, No. Andover, first premium,	$12 00
J. D. W. French, No. Andover, second premium,	10 00

PLOUGHING—WITH HORSES.

Joshua N. Kent, Newbury, first premium,	$12 00
R. S. Bray, Newbury, second premium,	10 00
M. H. Poore, West Newbury, third premium,	8 00
Geo. W. Russell, Lawrence, fourth premium,	6 00
Paul T. Winkley, Newburyport, fifth premium,	5 00

PLOUGHING—SWIVEL PLOUGH.

Wm. A. Russell, Lawrence, with oxen, first premium,	$12 00
John P. Foster, North Andover, second premium,	10 00
Peter Smith, Andover, fourth premium,	5 00
C. J. Norwood, Ipswich, Horses, first premium,	10 00
Edward P. Perley, Danvers, second premium,	6 00

CARRIAGES.

John E. Bailey, Marblehead, for Rubber Spring to Buggy and Sleigh,	Diploma.
Spear & Fifield, Methuen, Grocer's Wagon, premium,	$5 00
" " " Provision Dealer's Wagon,	Diploma.
Wm. Poor, Andover, Meat Wagon, gratuity,	6 00
Geo. H. Ferguson, Lawrence, Light Express Wagon,	5 00
" " " one Top Buggy,	Diploma.
M. B. Ames, Lawrence, Sleighs,	3 00.
" " " two Top Carriages,	10 00
Chas. Manson, Haverhill, three Wagons, gratuity,	6 00
J. W. Joyce, Lawrence,	5 00

IMPROVING PASTURE AND WASTE LANDS.

Joseph Horton, Ipswich, first premium,	$15 00

EXPERIMENTS WITH MANURES.

Benj. P. Ware, Marblehead, first premium,	$15 00
James P. King, Peabody, second premium,	10 00

GRAIN CROPS.

Geo. L. Flook, West Newbury, Corn Crop, first premium,	$10 00
Jas. J. H. Gregory, Marblehead, " " gratuity,	8 00
E. P. Robinson, Hamilton, Rye, first premium,	10 00

ROOT CROPS.

J. D. W. French, No. Andover, Potato Crop, first premium,	$10 00
" " " Ruta Baga crop, first prem.,	10 00
" " " Mangold Crop, first premium,	10 00
Daniel Carlton, No. Andover, Onion Crop, first premium,	10 00
J. J. H. Gregory, Marblehead, Cabbage Crop, first premium,	10 00

ESSAYS.

Ansel W. Putnam, Danvers, first premium,	$10 00
Jas. J. H. Gregory, Marblehead, second premium,	8 00

REPORTS OF COMMITTEES.

J. S. Howe, Methuen, Report, first premium,				$10 00
Joseph How, Methuen, Report, second premium,				8 00
T. C. Thurlow, W. Newbury, Report, third premium,				6 00
Awarded by the Committee on Poultry,				22 00
"	"	"	Vegetables and Seeds,	131 50
"	"	"	Bread, Honey, and Preserves,	18 50
"	"	"	Flowers,	48 00
"	"	"	Fruits,	258 00
"	"	"	Counterpanes and Rugs,	24 00
"	"	"	Leather Goods,	15 00
"	"	"	Manuf's and Gen. Merchandise,	25 00
"	"	"	Fancy Work, &c.	52 50
"	"	"	Work by Children,	14 50
			Total,	$1802 00

RECAPITULATION.

FARMS.

Amount awarded to	Ploughing,	$106 00	
" "	Improving Pasture, &c.,	15 00	
" "	Experiments with Manures,	25 00	$146 00

FARM STOCK.

Amount awarded to	Fat Cattle,	$12 00	
" "	Bulls,	86 00	
" "	Working Oxen and Bulls,	68 00	
" "	Milch Cows,	109 00	
" "	Heifers,	116 00	
" "	Town Teams,	90 00	
" "	Steers,	8 00	
" "	Stallions,	88 00	
" "	Brood Mares,	40 00	
" "	Family Horses,	40 00	
" "	Farm and Draft Horses,	43 00	
" "	Pairs of Draft Horses,	25 00	
" "	Colts,	51 00	
" "	Swine,	64 00	
" "	Sheep,	47 00	
" "	Poultry,	22 00	$909 00

FARM PRODUCTS.

Amount awarded to		Fruit,	$258 00	
"	"	Flowers,	48 00	
"	"	Vegetables,	131 50	
"	"	Grain Crops,	28 00	
"	"	Root Crops,	50 00	
"	"	All other objects,	231 50	—$747 00
		Total,		$1802 00

AMENDMENT TO THE CONSTITUTION.

Article 1. The President, Vice Presidents and Secretary of the Society shall be elected at the annual meeting by ballot.

Article 2. The Trustees shall be elected annually, one for each town in the County, and the Trustee for each town shall be elected by the members of the Society in said town at a meeting called for that purpose, in accordance with notice issued by the Secretary; and such election shall be final, and shall constitute the Trustee so elected a member of the board of Trustees of the Society; and the result of the election in each town shall be communicated as early as possible to the Secretary.

CONTENTS.

	PAGE.
Address of Oliver S. Butler,	3
The Exhibition,	19
Report on Fat Cattle,	19
" Bulls,	20
" Milch Cows,	21
" Herd of Milch Cows,	24
" Heifers,	29
" Working Oxen, Bulls, and Steers,	31
" Town Teams,	32
" Steers,	36
" Stallions,	36
" Brood Mares,	36
" Family Horses,	37
" Farm and Draft Horses,	37
" Pairs of Draft Horses,	37
" Colts,	39
" Swine,	39
" Sheep,	40
" Poultry,	41
" Ploughing,	43
" Carriages,	46
" Bread and Honey,	46
" Pears,	47
" Apples,	48
" Peaches, Grapes and Assorted Fruits,	49
" Flowers,	53
" Vegetables,	55
" Counterpanes, Carpetings and Rugs,	57
" Leather Work,	59
" Manufactures and General Merchandise,	59
" Fancy Work and Works of Art,	59

Report on Children's work, ... 61
" Improving Pasture and Waste Land, . . 61
" Manures, ... 65
" Grain Crops, ... 72
" Root Crops, ... 78
" Seedling Potatoes, ... 84
" Exhibit of Manufactures at the Fair, . . 87
" Treadwell Farm, ... 91
" New Winter Apples, ... 93
" Essays and Reports, ... 101
Essay by Ansel W. Putnam, on "Comparative Value of Crops as Food for Cattle," 102
Essay by J. J. H Gregory, on The Angle Worm, . . 106
Resolutions on the Death of Members of the Society . . 113
Treasurer's Report, ... 114
Officers and New Members, ... 116
Library, ... 118
List of Premiums, ... 119
Amendment to the Constitution, ... 126

TRANSACTIONS

OF THE

Essex Agricultural Society,

IN MASSACHUSETTS,

For the Year 1878,

WITH THE

FIFTY-SIXTH

ANNUAL ADDRESS,

BY T. C. THURLOW,

OF WEST NEWBURY.

Published by Order of the Society.

SALEM:
PRESS OF THE ESSEX COUNTY MERCURY.
1878.

ADDRESS.

Mr. President, Ladies and Gentlemen of the Essex Agricultural Society:—

In choosing me to deliver the annual address before this Society, you have selected one who though wholly unused to public speaking, is not unfamiliar with practical farming; one who has been accustomed from his youth to guide the plough, to handle the hoe, the spade, and the pruning-knife, and can not only say, as men of other professions are apt to on occasions like this, "I lived on a farm when a boy"—but more—I have remained, and intend to die upon one.

I have chosen for my subject "Suggestive Hints," and it will perhaps be excusable if I indulge in a few friendly criticisms on the general management of farms in this vicinity, at the present time.

In the first place, every farmer, if he has not already done so, should sit down carefully and candidly to consider to what crop, or crops, his farm is best adapted; in relation to its nearness to, or distance from a market; the quality of the soil, whether heavy or light, whether best adapted to grass, and the raising of stock, and the production of milk—or the growing of early vegetables and small fruits. He might with profit consult his more experienced neighbors in regard to it, and after being fully persuaded what course to pursue, let him stick to it; not changing from one crop or system to another, but making a specialty of some particular branch of husbandry, he will in the long run succeed in any, provided he combine with it a sufficient amount of skill, prudence and industry. Perhaps there is no one thing in which farmers as

a class are so deficient, as in a regular system of keeping accounts; in knowing in dollars and cents what this or that crop costs, or what is the actual profit from each animal. In what other business could a man succeed, who was so generally negligent of his accounts? These can be kept every day in the most simple manner; so that at the end of the year he can easily see what it has cost the family for sugar, for butter, for milk and for flour; the cost and proceeds of every animal and crop can also be very nearly estimated. The result would be that the yearly income from one cow would be found to be thirty or forty dollars, that of another seventy-five to a hundred; one yoke of oxen would have depreciated in value twenty-five or thirty dollars, while another would have gained as much. It would be seen that two old broken down horses would be less serviceable than one good one well kept, and so on.

A short time since, in talking with a smart, active New Hampshire farmer, he said to me, "I can raise corn at thirty cents per bushel." Being asked if he reckoned the loss to his land, interest, taxes, etc., he replied, "No, if you reckon all these, there is no profit in any crop." But they should all be taken into the account; then if it is found there is no real profit, it shows the need of still closer observation and care.

Recently, at a very pleasant dinner party, given by a gentleman of this county, supposing he had owned his farm but a few years, I asked him how long he had lived upon his estate. His reply was, "Two hundred and fifty years." This he immediately qualified by saying, "Perhaps one hundred and fifty years, or ever since the settlement of the country." Friends, many of you have lived upon your farms a hundred and fifty years, and as you look back and see the work that your fathers have accomplished, will you rest satisfied with your present attainments? The world moves forward; in science, in art, in agriculture, and those of you who will occupy these farms one hundred and fifty years hence, will, or

ought to be, as much in advance of us of the present day, as we are ahead of our fathers of a hundred and fifty years ago.

Make improvements; commence at home. Is there nothing about your house which can at a trifling expense be made more attractive and beautiful? A new coating of paint—the old chimneys modernized and repaired; a bay window here to contain the flowers, or a portico there both for comfort and ornament? Have your family all the conveniences they require and deserve? Are the best modern improvements in kitchen, pantry and living room? Is a good supply of dry fuel always on hand in a convenient place? Is pure healthful water accessible at all times to the house and stable? Have you carefully examined the drainage about your premises, to see that no subtle undercurrent is gradually destroying the health of yourself and family? While this subject has received so much attention from sanitary committees and physicians in our larger cities, I think it has been very much neglected in our country homes. Have you good ventilation in every apartment of your house? If not, secure it as soon as possible. Make home pleasant for the children—while they have their books, their papers, and their games for winter, they should also have their croquet ground, their pet animals, and their flower garden. Who of us that are older does not remember with pleasure the old cherry, pear, or early apple tree in our father's garden? What boy who has ever owned a pet colt, or a pair of steers, and called them his, if he lives to be a man and becomes a farmer, will not love his profession better, and be a better farmer for having owned them?

Many a boy has been driven from his paternal home, who would otherwise have stayed and adopted the profession of his father, had not that father, with too close a grasp and too arbitrary a disposition, treated him merely as a hireling—not consulting with him in his plans and purposes, and finally threatening to disinherit him if he should leave his home, and not become a farmer. You fathers, who have children grown

up to years of discretion, why not lot out your property to them, or at least have it understood what part, in case of your death, each one is to have—whether of land or money—that they make improvements upon and take an interest in what is to be theirs, and not feel that only at death will it be released from your tight grasp, and look forward to that event with pleasure rather than with sorrow.

Next to the house, the barn should receive special attention. It should be convenient and airy, at the same time tight and comfortable for the domestic animals. There should always be a cellar under it, if practicable. Plenty of dry muck and loam should be on hand to mix with the manure and absorb the ammonia. Everything about the premises should be kept sweet and clean. The wash from the house and sink drain should all be utilized and saved; mixed with dry earth, it contains very much of fertilizing material. Good water at all seasons of the year is indispensable in the barn yard. Many a farm in this county, at a trifling outlay of a hundred, or a hundred and fifty dollars, could be supplied with pure running water the year round; while now a great amount of hard labor is expended in drawing or pumping water for the cattle, and by the inmates of the house, in going perhaps rods, through winter's snow and summer's sun, to bring water for household purposes.

A large amount of money is every year wasted by the neglect of tools. Carts and farm wagons are often left unpainted and uncared for, till they fall to pieces through sheer neglect. A plough, cultivator, mowing machine, or steel tooth horse rake is often more injured by being exposed in one rain storm, or even in several heavy dews, than by years of use. Get the best, and take good care of them, and buy no more than are absolutely needed, should be the motto of every farmer. The farmer should plan out his work for weeks and months ahead. There are, in every season, certain days that are most suitable for planting, for haying, and for harvesting; these, if neglected, often result in serious

loss. It was the maxim of a successful farmer, always to have work under cover for rainy days, and never to work indoors in pleasant weather.

No farmer who cares for the health and comfort of his family will be without a good vegetable garden, the real value and luxury of which cannot well be reckoned in dollars and cents.

A neat and well kept flower garden is always a source of pleasure and refinement, and it is surprising to notice the improvement in floriculture, within a very few years. Nearly every door-yard contains asters, verbenas and geraniums, for which ten years ago any florist in the country would have taken first prizes.

The farmer should *think* as well as work. His library, however small, should contain a few of the best standard works, and the leading agricultural papers; none of them but will suggest some idea, and the thought goes before the act.

A farmer's club is of great value always, both for its practical utility and for drawing out the best social qualities. The rural town where I live has sustained such an one uninterruptedly for over twenty years, and although many of the earlier members have left us, their words, their thoughts, still live in our community.

Shade trees, which are indispensable in their proper place, are often planted too thickly and too near our dwellings, especially in towns and villages, thus causing them to be dark and unhealthy, when they should be light and cheerful. The larger species of evergreens are very much out of place on the sunny sides of our houses, while they would be very appropriate and necessary as screens and windbreaks along the cold and exposed sides of our buildings. I would recommend that a permanent committee on planting and locating shade trees be chosen in every town and village; the office would seem almost as important as that of the architect or landscape gardener. Rows of deciduous trees, planted along our road-

sides, would add much to the beauty and fertility of our farms, and a proper alternation of the maple, ash, beech, and chestnut, would produce a very pleasing and beneficial effect.

If the roads, especially near our houses, were kept clean of bushes, and instead of unsightly holes, piles of stones and other rubbish, the rough places were made smooth and sown down to grass,—then might our roadsides present the appearance of beautiful lawns, and at the same time be made profitable from the crops of grass, which could every year be taken from them. Formerly hogs were allowed to run at large in the public roads, but modern civilization has confined these animals to proper limits; it is to be hoped that at no distant day cattle and horses will be thus restrained, and not allowed to trespass where they have no more legal right than in your neighbor's fields and garden.

Many of the apple orchards of this county have of late years been sadly neglected. Perhaps the trees were formerly planted too thickly, and there were too many of them, but if they had received proper care and been protected from insects, they would today have been a source of great profit, Thirty years ago, according to a careful record kept at that time by my neighbor Maj. Poore, there were fourteen thousand barrels of apples raised in the town of West Newbury in a single year—very largely of Roxbury Russets. Now there are probably not over five thousand barrels raised in the same town in a productive year. Good winter apples, like the Baldwin and Russet will always sell at fair prices. Foreign markets are just being opened for them, and we, near the sea coast, have the advantage for shipping, of those living inland. Let us learn to pick and sort our apples with more care, and put them up *honestly* in clean nice barrels, then our fruit will soon have a reputation abroad, and will be always sought for at good remunerative prices.

There are other fruits which might be raised to advantage in this county, and with experience, and a fair amount of skill, could be made as profitable as any other farm crop.

Pears, peaches, quinces and plums are adapted to this section, and can be grown here to perfection. Grapes, which ripen tardily in our New England climate, are desirable for family use; some of the earliest varieties should be cultivated, and may possibly be raised with profit for the market. Cherries are a luxury, but they add much to the pleasures of home, and no fruit garden is complete without them. Strawberries and the other small fruits are a fixed fact. No town or village in the future but will have them; even at the present low prices, they are a paying crop. While people in cities, even of moderate means, have learned to use fruit freely as a necessary article of food, it is to be feared that in the country the fruit garden has been too often neglected. This is next in importance to the vegetable garden, and no farmer should fail to furnish his family with a supply of fruit, from the earliest strawberries to the latest winter apples and pears. It is to be regretted that many varieties of fruit which were formerly raised here in great abundance should have been almost wholly abandoned. For instance, winter pears, very delicious for cooking, were found on many farms almost as plenty as apples; now the trees are cut away and destroyed; instead, we see long named exotics, which never can or will fill the places of our former favorites. The same will apply to plums and some other fruits. While it may be said that the varieties have deteriorated or the soil become exhausted, or that insects have increased more than formerly, it may be replied that what is worth little, costs us little; what is worth having is worth working for; that he who becomes discouraged or fainthearted because of drought, mildew, or a few insects, is not deserving of the fruits which a bountiful Providence would bestow upon us.

There is scarcely a farm in this county but what contains some piece which would well pay for underdraining; some unsightly hollow, some damp meadow, usually the best and most productive land on the farm, if properly underdrained. Have you who raise strawberries for the market ever tried

such a piece? Did not the crop surprise you who have underdrained for grass? Two inch tile from a neighboring town can now be delivered at any depot in this county at twenty dollars per thousand feet. These should be laid at a depth of not less than three and a half feet, with a fall of at least one inch to the rod. With the low price of labor at the present time, the cost is not as much as one would at first suppose.

Probably there is no better stock for the farmer in general in this vicinity than milch cows. In order to maintain the fertility of our soil, we should keep as many as possible, get the best, and feed well. But what to do with the milk is the problem. A few years ago, when there appeared to be an unlimited demand, the prospect was good; it is so now to a certain extent; still many of us have been obliged the past summer, to sell our milk at less than the cost of production. The demand for good butter is unlimited, and my own opinion is that butter making under the Harnden system (that is, setting the milk in deep cans at a low temperature), would be better for many of us, than selling milk at the present prices.

Some of our farmers refuse from year to year to bring up their best stock to this exhibition, saying they have very little chance with the petted animals of the few, who generally take the premiums. This difficulty may be all imaginary, but is there not some danger that even this old society, which has always so nobly excluded the race course, shall through her committees refuse a premium to a colt, which would otherwise be a valuable family or draft horse, because its ancestors could not show a record of less than three minutes? The impression too seems to have gone abroad, that, under the rules of this society, none but members will be allowed to take premiums. This is erroneous, as the prizes are open to all residents of the county, who will conform to the printed rules and regulations.

A great improvement has been made of late in cutting

grass earlier than formerly; it is now generally admitted by our most practical farmers, that all kinds of grasses should be cut when they are in flower, or very soon afterwards. We have along our sea coast several thousand acres of land, known as salt marshes, which might be made more valuable by judicious ditching and dyking. The grasses on these meadows are very apt to be neglected till late in the season, one or two months after they have blossomed and gone to seed; then the hay is comparatively worthless. The most valuable of these, the Black-grass (*Juncus Gerardi*), was in blossom this year, June 20th, and the Foxgrass (*Spartina Juncea*) July 20th. Bordering on the Parker River in Newbury, are about two thousand acres of these marsh lands, which by a dam near the mouth of the river, at the estimated cost of thirty thousand dollars, might be rendered very valuable for growing any of the upland crops.

Those who have travelled through this county for the past few years, must have noticed the very poor condition of many of the roads, especially in the vicinity of this city, and in the interior. The roads in several of the towns in the southeastern section of the county are excellent, and those who have the care of them deserve much praise. Would it not be well for towns in choosing surveyors, to select men who know the difference between gravel suitable for roads, and soil adapted to the compost heap?

On some of our farms the fences are in bad condition. Many a man spends more time in driving the cattle from the mowing lot and corn field in hay time, than he would in making good fences at the proper season. If we would keep our cattle and sheep from being unruly in summer, we must have good fences to start with in the spring.

The farmer should be *temperate* in everything; in eating and drinking, in sleeping and working; not doing two days' work in one, or overworking his tired body, because he sees so much to do. It is to be hoped, that the day will soon come when the use of rum, or even cider, in the harvest field,

or on any other occasion, will be entirely among the things that were; and if those who possess wealth and culture, would set an example in this respect, and abolish from their tables and entertainments, all wines and other liquors, and join heart and hand in the good work, how soon might this demon of intemperance be entirely abolished from our state and nation.

The question may arise, how can a young man without capital or experience get his farm? I reply, work for others; working steadily, honestly and perseveringly, he will soon have the trade, and if he is prudent will save as much money, on the average at this, as at any other business. Let him begin with a small farm in a careful way, not expecting too large profits; perhaps by leasing one for a term of years he can acquire the requsite skill and capital. He should plan eventually to own his farm, for a man is twice the man every way, who owns the land he works upon. A man of my acquaintance, who had lived upon a farm for several years and afterwards bought it, said, after he owned his place, the very stones of which he built his fences seemed lighter than before.

A farmer to succeed should be in earnest, should be *enthusiastic* in his work. In what other business can one excel without enthusiasm? But you may reply, these are hard times, milk is down to the lowest figure; butter, cheese, pork and beef command only the lowest prices,—what is left after the potato bug, the canker worm, the cabbage fly, and the onion worm, is hardly worth marketing. My friends, if half the time which is spent in grumbling were devoted to earnest, cheerful work, times would have been better than they are, before this. Perhaps this may be true of other professions than farming?

A friend and neighbor of mine recently having failed in the mercantile business, went immediately back to his former occupation, took charge of a small schooner, and as it were, began life anew. Being asked if he could make anything, he replied, "Perhaps not, but I shall be all ready and in

business when the good times do come." So with us farmers, we cannot *afford* to let our farms go to waste—to let our trees die of neglect, and be eaten up by insects. We should be *up* and doing; the "good times" will come before we are aware of it. More than half of the farmers in this county with whom I have any acquaintance have money in the Savings Bank. Which is the best investment, money in the Five Cent Savings Banks, and Railroad shares, or in beautifying and making comfortable our own homes, in underdraining land, buying manure, reparing fences, and in a thousand ways adding to the value and convenience of our farms, at the same time aiding the unemployed, who stand waiting and asking for our assistance.

But it is not all dollars and cents that we live or should live for. Culture and refinement are equally to be sought after. It is a law of our being, that after the immediate wants of the body are supplied, we turn to the study and enjoyment of the beautiful, both in nature and art. The man who leaves his New England home among the hills for the western prairie, goes for gain; a very commendable object certainly, if it is not carried too far, but as soon as he has made himself a comfortable home, and provided for the wants of his domestic animals, he naturally thinks to beautify his surroundings—planting a group of trees here, or a line of evergreens there, not forgetting the vines, shrubs and flowers, which will do so much to make his home cheerful and his family happy. In older countries this is carried still further, till the parks and gardens of England, France and Germany, are known world-wide, and are held out as examples to us on this side of the Atlantic, oftentimes not so much to our help as discouragement.

Our two largest cities, New York and Philadelphia, have expended immense sums in laying out public parks, and in both instances have copied and imitated nature as far as possible. Beautiful lawns, wooded glens, and primeval trees are preserved in their natural beauty, and the highest style of landscape gardening takes nature for its teacher.

Many of the farmers of this county look out of their own windows upon lawns as fair and sloping, as can be found in Fairmount or Central Parks. Their estates contain grottos and glens as lovely and secluded as in either of these, and forest and woodland as varied and more extensive than in any public park in the country.

I know of no way of enjoying these scenes in nature so profitably as by doing as we have in West Newbury (you will excuse me for referring again to my own town by way of illustration). We have a little Botanical Club, some three years of age, which having struggled hard for an existence in its earlier days, now numbers over forty-five members, including many of our most intelligent and valuable citizens. Our two physicians were unwittingly drawn in, not suspecting that the thing was interfering with their means of a livelihood, and we hope at an early day to dispense with the services of both these gentlemen, although we value them highly as friends and townsmen. Our plan is to hold field meetings about once a month, especially during spring and autumn. A pleasant grove in some neighboring town is generally selected as a place of rendezvous, to which the members go by different routes, at their own convenience. A basket picnic at noon is usually followed by a discussion in the most friendly and familiar way, of the various specimens we have gathered, and all return home at an early hour, pleased and delighted with the occasion; and we are unanimously agreed that our minds and bodies are so refreshed and invigorated by these little respites, that we can perform more labor, both mental and physical, than if we had not indulged in them. We meet once a month during winter, at the house of some member, to hear an essay and enjoy a social chat on any subject connected with botany; but the principal enjoyment comes from our rambles in summer through woodland and pasture in search of wild flowers, which is delightful in itself, besides being eminently healthful. We believe thoroughly in out of door exercise for all classes; and that walking, suitably dressed, with a pleasant object in view, is far better for

health than riding in fashionable luxurious carriages. We have known several invalid ladies who have entirely recovered their health by this same sort of exercise.

Are there any young ladies here, who are losing the color from their cheek, or the elasticity of their step,—whose parents are contemplating a trip to Florida, to avoid our New England winter, or have sought the mountains in summer,—did you ever try the medicine of walking? Do you know where in all your vicinity to find the earliest Arbutus, Hepatica, or Bloodroot? Do you know in what meadows to look for the Orchids, and every knoll that is congenial to the Columbine and Saxifrage? At this season, can you find the Fringed Gentian? Or can you tell how many varieties of Aster and Golden Rod are within sight of your homes?

Are there any professional gentlemen here, or those of sedentary habits, who are troubled with dyspepsia, and are looking forward to a longer summer vacation as their only hope? Do you know all the species and varieties of trees and shrubs within five miles of your doors? Or have you studied the rocks and minerals which compose these hills, and form these valleys? Probably none of us realize and appreciate as we should the beauty and grandeur of these scenes around us. Bayard Taylor, after having travelled over all Europe, when standing on the top of Pow-wow Hill in Salisbury, is said to have remarked that he never before had seen anything so beautiful. Why need any of us go abroad in search of beautiful scenery when nature has done so much for us at our very doors? Do you in this section fully appreciate your lovely Merrimac, with its tributaries, the Spicket and Shawsheen; those hills of Andover—Boxford with her twenty ponds, Wenham and Essex with their deep damp woods,—Cape Ann with its unsurpassed drives, its variety of ocean woodland and villa; the shore towns with their seventy-five miles of sea coast? All these form a scene of beauty and loveliness nowhere excelled, if equalled, in this country or the world.

Farmers of Essex County: I congratulate you upon this

the return of our annual festive occasion. This beautiful day—this large assemblage of friends and neighbors—the fine display of domestic animals, and the unusually rich one of fruits and flowers in yonder hall, are all auspicious omens. Let us then together take courage for the future. Let us be *enthusiastic* in our work, making the most of our circumstances,—ever ready to stand firmly for the right, for morality, for temperance, for good and wholesome laws,—not being deceived by the promises of politicians and demagogues; then shall our future be even more prosperous than the past, and we be proverbially the strength and hope of the nation.

CATTLE SHOW AND FAIR.

The Show was held at Lawrence, Sept. 24th and 25th, 1878. It was very largely attended on both days. The show of Stock was on the Essex Company's grounds, near the Merrimac River. The exhibition of Fruit, Domestic Manufactures, etc., at City Hall, and Vegetables in a tent adjoining.

The entries in the several departments were as follows:—

STOCK, Etc.

Fat Cattle	1 Entry.
Bulls	12 Entries.
Milch Cows	13 "
Herds of Milch Cows	2 "
Heifers	60 "
Calves	8 "
Working Oxen	10 "
Steers	3 "
Town Teams	2 "
Stallions	11 "
Brood Mares	6 "
Family Horses	10 "
Farm and Draft Horses	13 "
Pairs of Draft Horses	7 "
Colts	25 "
Swine	13 "
Sheep	3 "
Poultry	49 Coops.
Ploughing, single teams	1 Entry.
" double "	7 Entries.

Ploughing, Horse team ..... 9 Entries.
" 3 or more Horses.... 3 "
" Swivel Plough..... 2 "
Agricultural Implements.....80 articles.
Carriages.....5 entries.

There were on exhibition :—

550 plates apples.
287 plates pears.
89 plates peaches, grapes, etc.
240 lots of vegetables.
12 parcels butter and cheese.
28 parcels bread, cake, etc.
25 traces corn.
4 entries shoes.
86 entries counterpanes and rugs.
360 entries fancy work, etc.
15 entries children's work.

The annual meeting of the Society was held at the Court House, and was fully attended. Benj. P. Ware, the President, in the Chair. The officers chosen, as will appear in another place in this volume, were a president, four vice presidents, and a secretary, the trustees having been previously chosen by the members in their several towns, according to an amendment to the Constitution of the Society, adopted last year.

An unusual number of members have died during the year. Among those who have occupied prominent positions in the government of the society may be mentioned Hons. Allen W. Dodge of Hamilton, and Daniel H. Stickney of Groveland, Dr. Joseph Kittredge of North Andover, and Samuel C. Pitman of Swampscott.

Among other members—Benj. Haskell, M. D., Eben Pool of Rockport, the latter having been a member for over fifty years, and Samuel Preston of Danvers.

Rev. O. S. Butler, of Georgetown, presented resolutions on the death and character of Allen W. Dodge and D. H. Stickney, with the following remarks :—

Mr. President :—It has been our custom since the earliest history of our society, at its annual meeting, to mark with suitable resolve and reference the decease of our official members. During the past year, two of our official members have died, the Hon. Allen W. Dodge and the Hon. D. H. Stickney. It seems to me eminently proper that we should stop a moment at this juncture of our business and record with tearful interest our just estimate of their lives and characters.

We have come up to our annual feast; we shall take each other by the hand; we shall look into the faces of these stalwart men; we shall walk among the flocks and herds of our noble animals; we shall go into the hall across the way and gaze with unmingled delight upon fruit and flowers, as well as the handiwork of man and maiden. But the noble, manly form, the genial, glowing countenance, the words of wisdom and sparkling wit, of our old friend and co-laborer, will not be seen or heard among the living, for Allen W. Dodge is no more here.

And we shall nowhere meet our familiar and loving friend, D. H. Stickney. That tall and graceful form is low in the dust. No, my fellow laborers, they are not here; they have entered upon a higher and nobler life, and are now engaged in the activities of the great beyond.

At the request of the officers of the society, I have reluctantly consented to prepare and present to your attention the following resolutions, as expressive of our regard and esteem for these our brethren, whose loss we greatly deplore :—

The Essex Agricultural Society has learned with profound sorrow of the decease of two of its official members, during the past year, the Hon. Allen W. Dodge and the Hon. D. H. Stickney. In view of this sad bereavement it is therefore resolved :—

First, That we recognize the goodness of our Heavenly Father in giving unto us such honorable and useful lives, as well as we do His hand in that mysterious providence that has removed them from our midst.

Second, That we recognize and record our highest appreciation of the service rendered to our Society in particular, and the cause of

agriculture in general, in the county and state, both in their private membership of the society, and in their official capacity so long and so faithfully filled,—Mr. Dodge having served the Society as Trustee, Orator, Secretary and President, and Mr. Stickney as Trustee and Vice-President.

Third, That we recognize with unmingled pleasure, their ardent love of agriculture, horticulture and floriculture, in all their refining and elevating influences, that invite our admiration and excite our emulation.

Fourth, That as man is more than his accidents, so the purity of their lives and the true nobility of their natures, have impressed us with their worth while living, and of our irreparable loss in their death.

Fifth, That we tender to their bereaved families our warmest sympathies, and commend them to the mercy of our God, and to the hopes and relationship of the world to come.

Sixth, That a copy of these resolutions be placed on the records of the society, and a copy sent to the families of the deceased members.

After presenting the above resolutions Mr. Butler proceeded to say :—

Mr. Dodge was my friend, long cherished and dearly beloved, the first to turn my attention and interest towards this society, in whose prosperity and success he took so great an interest. For from his earliest years he showed a fondness for agriculture, horticulture and floriculture. His fondness for these pursuits grew with his growth and strengthened with his strength, so that when quite a young man he became a member of this then young but growing society, which relation continued until his death.

Among the early compeers and fellow-laborers were the Hon. Daniel P. King, Hon. James H. Duncan, Hon. John W. Proctor, Hon. Joseph Howe, Dr. Andrew Nichols, Gen. William Sutton, and Gen. Josiah Newhall.

Such was his interest and activity in the cause of agriculture, that as early as 1842 he was invited to deliver the annual address before the society, which he did, to their delight and satisfaction. The subject of the address was "The cultivation of the apple," a subject upon which he was thoroughly conversant at that time, and at the time of his death there was no man in the county so well informed in regard to the

different varieties of apples, their methods of culture, their adaptation to soil and climate, and everything that pertained to the cultivation of apples.

Mr. Dodge continued to manifest his interest for the society to such an extent that in 1844 he was chosen Secretary, with very great unanimity, and continued to serve in that capacity for seventeen years, or until 1861, when he was elected President, in which capacity he served us for two years, when he declined a re-election, and for the remainder of his life he sustained the relation of Honorary Trustee. But Mr. Dodge was more than an agriculturist, he was a *man*, a true nobleman by nature, and one of the most thoroughly cultivated men in our society, if not in the state.

His character as a friend and neighbor, as a man of the strictest integrity in all of his official relations, as a devout and faithful christian, has been most justly and worthily embalmed in the memories of the public, whose servant he was, and I will not repeat them here. Peace to his ashes and honor to his memory.

Of Mr. Stickney it may be said that he was very active and useful to our society from the first of his membership, devoting his time and money to the best interests of the society. Although not a large farmer, his knowledge of the science was evinced by the productiveness of his land, and the variety of his production of the grape and the pear. He was for several years one of our Trustees, and in interest or activity was not excelled by any other member; in many respects he was harder worked and better known than any other member of our society. At the time of his decease he was one of our Vice-Presidents.

Mr. Stickney was one of the most companionable of men, warm in his attachments, zealous in his defence of the interests of his friends, wise in council, persistent in his efforts to secure his ends, of necessity his life was a success. Beginning life in comparative obscurity, he, by his own unaided efforts, became the peer of his superiors, until he sat beside Governors and Councillors, and was consulted by some of the foremost men of the nation.

When he was unexpectedly cut off in the prime and strength of his manhood, it was proper that business and pleasure should cease in the village where he was born, on the day of his funeral, and that the whole community should

join in the mournful services and procession, as we lifted the snowy covering from the white-robed earth, and laid our dear friend among the dust of his kindred, on the sloping banks of the beautiful Merrimac he loved so well.

REPORTS OF COMMITTEES, &c.

FAT CATTLE.

The Committee on Fat Cattle have attended to their duty, and report that but one pair was entered, and that by Chas. A. Butterfield of North Andover, and they award to him the second premium of $10.

The Committee were disappointed in not finding more cattle entered for premiums, as they are fully aware that there are many fat cattle in the county well worthy of a premium.

Jas. P. King, John C. Gage, A. H. Gould, R. T. Jaques, H. G. Kimball—*Committee.*

BULLS.

The Committee on Bulls submit the following award of premiums :—

Wm. A. Russell, Lawrence, Holstein Bull, with five Calves of his stock, 1st premium $15.

Chas. S. Bradley, West Newbury, Devon Bull, 2d premium, $6.

Chas. S. Bradley, West Newbury, Short Horn do, 2d premium, $4.

Wm. A. Russell, Lawrence, Holstein under 2 years, 1st premium, $6.

Chas. Perley, Boxford, Ayrshire Bull, 1st premium, $10.

Doane Cogswell, Bradford, Ayrshire Bull, 2d premium, $6.

J. D. W. French, North Andover, Ayrshire under 2 years, 1st premium, $6.

S. F. Newman, Newbury, Ayrshire under 2 years, 2d premium, $4.

Geo. W. Russell, Lawrence, Jersey under 2 years, 1st premium, $6.

MILCH COWS.

The Committee on Milch Cows respectfully submit the following report:—

The number of entries in this department of stock was not large, but the animals shown were very fine. Five competitors entered their stock for premium; and their statements are herewith submitted. Mr. French, Mr. Russell, and Mr. Thurlow, give an interesting statement of the amount of milk produced by their cows, from an actual daily record kept by them. It is hardly fair to place the small compact Ayrshires of Mr. French in competition with the large square built Holsteins of Mr. Russell, but the premium offered for the best milch cow of any breed, required this to be done. Undoubtedly the Holsteins exhibited produced the largest amount of milk, and the Ayrshires are more cheaply kept. To be equally profitable the Holsteins ought to produce the most. The relative value of large and small cows for milking purposes is a matter which has been much discussed, but after all must be decided by every farmer for himself, and must depend almost entirely on his means of feeding. The Committee recommend the following awards:—

Special premium $25, to Wm. A. Russell of Lawrence.

Best Milch Cow.—1st premium $12, to Wm. A. Russell, of Lawrence; 2d premium $9, to J. D. W. French, No. Andover.

Ayrshires.—1st premium $12, to J. D. W. French, No. Andover; 2d premium $6, to J. D. W. French, No. Andover.

Jerseys.—1st premium $12, Chas. O. Cummings, Andover.

Holsteins.—1st premium $12, to Wm. A. Russell, of Lawrence; 2d premium $6, to Wm. A. Russell, of Lawrence.

Grades.—1st premium $12, to David W. Noyes of Methuen; 2d premium $6, to James E. Thurlow of Methuen.

For the Committee,

JOSEPH S. HOWE, *Chairman.*

STATEMENTS OF WM. A. RUSSELL.

To the Committee on Milch Cows:—

I enter for the special premium of $25, cow Maid Marion, 181. Imported. Calved in 1872. Recorded in the "Holstein Record," published by the Holstein Breeders' Association.

Her milk record for 3 years.

Year.	No. days in Milk.	No. lbs.	Av. per day.
1875–76	421	11,990	28.48
1876–77	304	9,375	30.83
1877–78	304	9,560	31.38

She dropped a c. c. Jan. 28, 1875; again, b. c. July 8, 1876, and again a c. c. Sept. 17, 1877. Is due to calve Oct. 10, 1878.

For account of treatment, food, etc., see statement in regard to Herd of Milch Cows.

I enter for the best Milch Cow, Lady Andover, 16. Calved in 1869. Bred by the exhibitor. Sire, Zuider Zee, 2d, (57). Imported. Dam, Midwoud, 4 (26), by Hollander (19). Grandam, Lady Midwoud (17). Imported. Recorded in the "Holstein Record," published by the Holstein Breeders' Association.

Her milk record for 2 years.

Year.	No. days in Milk.	No. lbs.	Av. per day.
1876–77	273	9,856	36.11
1877–78	334	10,159	30.41

is still in milk.

She dropped a c. c., Sept. 14, 1876, and again a b. c., Oct. 1, 1877; is due to calve, Nov. 19, 1878.

For account of treatment, food, etc., see statement in regard to Herd of Milch Cows.

I enter for premium for thoroughbred Holsteins, four years old and upward, Lavinia, 168. Calved in 1869, and Alemaria, 75. Calved in 1872.

Both these cows were imported, and are recorded in the "Holstein Record," published by the Holstein Breeders' Association.

Lavinia dropped her last calf March 6, 1878, and is due to calve again Feb. 4, 1879.

For the first ten days in April she gave 560 lbs. of milk, an average of 56 lbs. per day. For the last ten days in August she gave 355 lbs., an average of 35 1-2 lbs. per day. She has been dry but two weeks in four years, and has had a calf every year.

STATEMENT OF J. D. W. FRENCH.

To the Committee on Milch Cows:—

I enter for special premium of $25 for best milch cow of any age or breed, my Ayrshire cow "Roxanna."

Milk Record.

Name.	A. R.	No. of days in milk.				Yield in lbs.			
		1874	1875	1876	1877	1874	1875	1876	1877
Roxanna (Calved 1870.)	1816	360	300	335	256	8183	7431	6785	5535

The above record is for 4 years. Roxanna dropped her last calf April 30, 1878. Her yield since, for 123 days, has been 4173 lbs. Average per day 33.9 lbs. (nearly 34 lbs.). The Committee will observe that Roxanna is a small cow, even for an Ayrshire. That is, below the average size.

I enter for premium for best Milch Cow of any breed, with evidence as to quantity of milk, 1st premium $12, 2d premium $9, my Ayrshire cow, Julia, 2578, A. R. Calved May, 1872. Milk record begins in April, and runs to Sept. 1, 140 days. Total yield 4062 lbs. Average per day, 29 lbs.

Dropped her last calf March, 1878. Her dam is Susan, 1875. Imported, A. R. Her Sire is Conqueror, 1574. Imported, A. R.

I enter for premiums for best Ayrshire cows, 4 years old and upward, premiums $12 and $6, my Ayrshire cows, Nina Lyman, 4611, A. R.; calved April 15, 1874; Dam, Nina 4th, 1034, A. R., Sire, Lochiel, 243, A. R.; and Privet, 3107, A. R.; Calved May 11, 1874; Dam, Primrose, 711, A. R., Sire, Fitz James, 550, A. R.

Nina L. dropped her last calf Feb. 15, 1878. Her milk record begins Feb. 17 and runs to Sept. 1, 196 days. Total yield 5105 lbs. Average per day, 26 lbs. Privet, during the year 1877, in 329 days yielded 4755 lbs. Dropped her last calf Aug. 27. Her yield for 2 weeks since has been 436 lbs. Average per day, 31.1 lbs.

The milk is weighed morning and night of each day throughout the whole year, so that the amounts given are as accurate as it is possible to make them.

All my animals entered for premiums are recorded in the Ayrshire Record (A. R.), published by the Ayrshire Breeders' Association, and all trace directly to importation from Scotland.

Feed.—In the summer season, after about August 1, the cows in milk have received, in addition to pasturage, fodder corn or grass, but *no grain.* In winter, 10 quarts of Mangolds, 2 quarts meal (Indian), besides the usual rations of hay have been fed to each cow.

J. D. W. French.

STATEMENT OF JAMES E. THURLOW.

To the Committee on Milch Cows:—

Number of quarts of milk given by cow Nelly, belonging to James E. Thurlow, between the date of Oct 9, 1877, and Sept 23, 1878, dropping her calf Oct, 9, 1877:—

Oct. 9 to Nov. 1,	359 1-2 qts.	average 15 29-46
November	516 "	" 17 5-6

December,	428	qts.	average 13 5-6
January,	409	"	" 13 6-31
February,	357	"	" 12 3-4
March,	387 1-2	"	" 12 1-2
April,	332	"	" 11 1-5
May,	360 1-2	"	" 11 2-3
June,	351 1-2	"	" 11 2-3
July,	336	"	" 10 5-6
August,	298 1-2	"	" 9 2-3
Sept. to 23d,	166 1-2	"	" 7 1-2
Total,	4302	Average,	12 101-175

The feed of the same cow for the winter season was dried corn fodder, Hungarian and English hay of equal parts, from 1-2 to 3-4 bushels brewery grain, 2 quarts meal, 1-2 peck potatoes; the summer season being 1-2 bushel brewery grains, one quart of meal, and pasture, per day. She is to calve Dec. 28, 1878. She also the year before calved Oct. 10. From Oct. 24 to Nov. 1, gave 147 1-2 qts. Average 21 1-15 per day.

JAMES E. THURLOW.

Methuen, Sept. 23, 1878.

STATEMENT OF D. W. NOYES.

To the Committee on Milch Cows:—

This Milch cow, entered by David W. Noyes, Methuen, gives 20 quarts of milk per day. Her feed is pasture, corn fodder, one peck shorts, and three quarts of meal, per day.

D. W. NOYES.

HERDS OF MILCH COWS.

Committee on Herds of Milch Cows report as follows:—

1st premium to Charles Perley, of Boxford, $18.

2d premium to William A. Russell, of Lawrence, $12.

For the Committee,

JOHN L. SHOREY, *Chairman.*

STATEMENT OF CHARLES PERLEY.

To the Committee on Herd of Milch Cows:—

I enter for premium, for best herd of Milch cows, my Ayrshire cows,—Madge Day, 4038, calved March 5, 1878. Rosa McDonald, 2d, 5053, Feb. 15, 1878. Rosa McDonald, 3d, 5056, Dec. 12, 1877. Milly Day, 5049, June 10, 1878. Flora Frolic, 5056, March 10, 1878.

These cows were kept through the winter on meadow hay, straw and corn fodder, with about six quarts of roots to each cow per day. This was their feed until March, then they had good English hay, and those that had calves had each about two quarts of meal per day. About the 10th of May they were turned out to pasture, and have had nothing except what they got in the pasture from that time.

The Record of their Milk.

Madge Day, due to calve March 8, 1879.

April.....840 lbs.	July.....938 lbs.
May.....871 "	August.....962 "
June.....969 "	September...624 "

Rosa McDonald, 2d, due to calve February 15, 1879.

March.....496 lbs.	June.....560 lbs.
April.....515 "	July.....575 "
May.....520 "	August.....558 "

Rosa McDonald, 3d, due to calve December 14, 1878.

January .....465 lbs.	May .....600 lbs.
February.....470 "	June.....675 "
March .....500 "	July .....650 "
April.....540 "	

Milly Day.

August.....826 lbs.	Sept., 21 dys. 546 lbs.

Flora Frolic, due to calve May 16, 1879.

May.....620 lbs.	August.....720 lbs.
June.....660 "	September....575 "
July.....672 "	

CHARLES PERLEY.

West Boxford, Sept. 24, 1878.

STATEMENT OF WM. A. RUSSELL.

To the Committee on Herd of Milch Cows:—

I enter for premium for best herd of Milch cows, my Holsteins: Lady Clifeden, 159; Maid Marion, 181; Lady Andover, 16; Mabit, 178; Lady Clay, 158; and Cathrena, 105.

These animals are all recorded in the "Holstein Record," published by the Holstein Breeders' Association. They were all imported or bred by the exhibitor. The milk of each cow has been carefully weighed every milking, the cows being milked three times a day through the heaviest flow.

The milking record for Lady Clifeden and Maid Marion for 3 years and Lady Andover for 2 years.

Name, No., Age.	Years.	No. days in Milk.	No lbs.	Av. per day.
Lady Clifeden, 159,	1875-76	362	16,274	44.95
Calved in 1868.	1876-77	282	12,243	43.60
	1877-78	396	13,327	33.40
Maid Marion, 181.	1875-76	421	11,990	28.48
Calved in 1872.	1876-77	304	9,375	30.83
	1877-78	304	9,560	31.38
Lady Andover, 16.	1876-77	273	9,856	36-11
Calved in 1869.	1877-78	334	10,159	30.41

The record for Mabit, Cathrena, and Lady Clay, since dropping last calf, to Sept. 1st.

Mabit dropped last calf Sept. 14, 1877; is due Sept. 25, 1878; number of days in milk, 318; number of pounds, 8,973; average, 28.20.

Lady Clay dropped last calf May 10, 1878; is due June 10, 1879; number of days in milk, 101; number of pounds, 4,785: average, 43.5

Cathrena dropped last calf March 24, 1878; is due March

1, 1879; number of days in milk, 153; number of pounds, 6,325; average, 41.34.

Lady Clifeden dropped a c. c. Feb. 1, 1875, again a c. c. May 8, 1876, and again a c. c. April 8, 1877; is due Oct. 10, 1878. Maid Marion dropped a c. c. Jan. 28, 1875, again a b. c. July 8, 1876, and again a c. c. Sept. 17, 1877; is due Oct. 13, 1878. Lady Andover dropped a c. c. Sept. 14, 1876, and again a b. c. Oct. 1, 1877; is due Nov. 19. 1878.

Summer Treatment.—From the last of May to the first of November, milking begins at 5 A. M. and 6.30 P. M., and with new milch cows giving a heavy flow, I make a practice of milking three times a day. The food during this time is pasture, with two quarts of meal (corn ground with cob), and after the first of August a feed of fodder corn morning and night.

Winter Treatment.—From the first of November to the last of May, milking begins at 5 A. M. and 6 P. M.; after milking in the morning, the cows in milk are given two quarts of meal and two quarts of shorts; after they have eaten that, they are given a feed of good hay; after eating the hay they are watered. They have been carded, cleaned and bedded meanwhile. At noon they are given the same quantity of grain, excepting the heifers with first calf, which have grain but once a day; after eating the grain they are given a feed of corn fodder, cut up and mixed with hay. Watered at 4 o'clock. After milking at night they are given a feed of mangolds and turnips, or mangolds alone. After eating the roots they are given a feed of corn fodder; they are then left for the night.

Wm. A. Russell,
by J. C. Poor.

HEIFERS.

The Committee on Heifers report the following premiums:

Chas. Perley, Boxford, Thoroughbred Ayrshires in milk, 1st premium, $12.

J. D. W. French, North Andover, do, 2d premium, $6.

Frank J. Bradley, Methuen, grade do do, 1st premium, $12.

G. S. Phippen, Methuen, do do, 2d premium, $6.

J. D. W. French, North Andover, Thoroughbred Ayrshire that had never calved, 1st premium, $6.

Chas. Perley, Boxford do do, 2d premium, $4.

Wm. A. Russell, Lawrence, Holstein do do, 1st premium, $6.

C. S. Bradley, Methuen, Durham do do, 1st premium, $6.

C. S. Bradley, Methuen, Devon do do, 1st premium, $6.

S. F. Newman, Newbury, grade do do, 1st premium, $6.

M. C. Andrews, Andover, do do, 2d premium, $4.

Chas. Perley, Boxford, Heifer Calves, 1st premium, $5.

S. F. Newman, Newbury, do do, 2d premium, $3.

C. H. Ordway, J. N. Rolfe, J. B. Spiller—*Committee.*

WORKING OXEN AND STEERS.

Your Committee tested the drawing of Oxen and Steers entered for premium, all except Chas. Hazeltine's of Bradford, and made the following awards:—

Oxen.—First premium, Jos. H. Reynolds; second premium, A. M. Bodwell; third premium, G. F. Mason.

Steers.—First premium, B. H. Farnum; second premium, R. S. Bray.

Your Committee allowed Mr. Poor, foreman of W. A. Russell's farm, to draw his Holstein bulls, 4 and 5 years old. They were hitched to one of the ox wagons containing 4,400 pounds, to which were hitched two other wagons, loaded, one with 3,000 and the other with 4,000 pounds, making a total of 11,900 pounds, besides 75 persons, averagiug 125 pounds

each; and your Committee would recommend that in future a special premium be offered for Working Bulls.

Geo. W. Russell, Geo. C. Foster, T. H. Balch, James Nason, Joshua N. Kent—*Committee.*

TOWN TEAMS.

The Committee award to the farmers of the town of North Andover, for their team of eighteen yokes oxen, 1st premium; $30.

For Horse team, consisting of seven pairs of horses, 1st premium. $30.

James T. Johnson, *Chairman.*

STEERS.

The exhibition of the well matched and thoroughly broken yearling Hereford steers of Master Byron Farnum, of North Andover, was one of the features of the show, and reflected great credit upon their youthful owner and trainer. We unanimously award him the first premium of $5. Benny and Ralph Farnum, also of North Andover, entered one pair yearlings and one pair steer calves. We award them the second premium of $4 on their yearlings, and recommend that a gratuity of $3 be given to them on their calves. These steer calves were broken to the yoke, were nicely matched, and, in the opinion of the Committee, were well worthy of a premium, and it is to them a matter of regret that no premium was placed at their disposal.

"Experience is a hard master, but a good teacher." The farmers of Essex County, after passing through a few years of unexampled adversity, are becoming apt scholars, and it is a matter of congratulation that we are fast realizing the fact that the reckless and spendthrift style of the "flush times" is one of the things of the past—that we recognize we are now

in the midst of an economic era, and consequently must raise and produce upon our farms that which we consume. Heretofore Maine and New Hampshire have furnished almost entirely our working oxen. There should be a stop put to this. It is our belief that Essex County farmers can and *should raise their own oxen*. The Farnum lads have demonstrated that this can be done successfully.

We would respectfully suggest to the board of trustees the advisability of offering premiums for steer calves, as it seems to us that the raising of steers should be as carefully fostered by the society as the rearing of heifers.

Perhaps, without going into an extended essay upon the merits of the different breeds, it might be well to offer a few hints, which are suggested by personal experience as well as by observation, concerning steers and their raising. After deciding upon the breed best adapted to your farm, and above all else to your pastures—for I should as soon think of stocking a milk farm with a herd of Brittany cows, as to raise Durham or Dutch steers on the poor pastures to be found in some parts of Essex County—use your best judgment in selecting a thorough bred bull, as near your ideal of what a perfect bull in shape and form should be, as possible. All breeders agree that the blood of the bull is one of the most essential features of breeding, for the strong-blooded sire almost invariably transmits his leading characteristics to his progeny; frequently several generations are stamped and marked by some strong-blooded ancestor. When purity of blood is one of the main objects of breeding, one should be very careful that the cow had never been with calf by a bull of another breed. In selecting your calves, do not, as is often the case, let the fancy price offered by some butcher bias and warp your judgment. Make it a rule to sell the poorest. *Always raise the best*, and then good feed, kind treatment, and the boys will do the rest.

Horace F. Longfellow, Joshua N. Kent, Dudley Bradstreet, Abel Stickney—*Committee.*

STALLIONS.

The Committee on Stallions report the following awards :—

G. W. Russell, Lawrence, for Stallion "Plucky," with 5 colts of his stock, premium $25.

J. G. McAllister, Lawrence, Stallion 4 years old, 1st premium, $15.

Chas. S. Clark, Salem, do do, 2d premium, $10.

H. M. George, Saugus, Stallion 3 years old, 1st premium, $10.

Daniel Tenney, Newbury, do do, 2d premium, $6.

A. B. Woodis, *for Committee.*

BROOD MARES.

The Committee on Brood Mares have attended to their duties and report as follows :—

There were five entries of Brood Mares with their foals by their side. After a very careful examination of these animals, your Committee awarded premiums as follows :

B. G. Gutterson, Methuen, Messenger Mare, 10 years old, 1st premium, $15.

P. R. Gutterson, Methuen, Morrill Mare, 10 years old, 2d premium, $10.

Henry Small, Lawrence (no pedigree given), 3d premium, $8.

There were two other entries. One by D. B. Webster of Lawrence, but your Committee received no statement, written or verbal, and as the mare was without a keeper, we were unable to judge of her merits.

The other entry was by J. T. Griffin, North Andover. The age and size of his mare would not entitle her to a premium, but there were points of merit both in the dam and her foal that would entitle them to favorable notice.

M. S. Jenkins, O. S. Butler—*Committee.*

FAMILY HORSES.

Your Committee, every member being present, attended to the duty assigned them, on the afternoon of the 24th of September, 1878, and made the following awards :—

First premium, $15, to C. D. Hunking, Haverhill, for his black horse, 7 years old, weight 950 pounds, and shown in a top buggy.

Second premium, $10, to Samuel G. Bean, Andover, for his black horse, 11 years old, weight 1100 pounds, and shown in a top buggy.

Third premium, $8, to George F. Mason, Andover, for his black horse, 5 years old, weight 1245 pounds, and shown in a Concord wagon.

The other entries were :—

Paul T. Winkley, Newbury, gray horse, 9 years old, weight, 1050 pounds, and shown in a Concord wagon.

George W. Bray, Newbury. Withdrawn.

Charles Perley, Boxford, bay mare, 18 years old, weight 1000 pounds, and shown in Concord wagon.

D. G. Todd, Rowley, light bay horse, 5 years old, weight 1125 pounds, and shown in Concord wagon.

G. S. Phippen, Methuen, horse, 5 years old, weight 1000 pounds.

Levi Emery, Lawrence, two horses; the nigh horse, 10 years old, weight 1120 pounds; the off horse, 7 years old, weight 1140 pounds; and shown in double harness on a farm wagon.

David Smith, Newburyport, chestnut horse, 7 years old, weight 1070 pounds, and shown in a carryall.

Immediately after meeting, the Committee selected a stretch of ground where they could examine the animals and be able to see them move. The Marshal, who was assigned to duty with the Committee, was at once directed to order the horses

to be brought out in harness. Some of them were ready, so that work was begun without any unnecessary delay. An inquisitive crowd of lookers-on caused some inconvenience to your Committee, and it was impossible for the Marshal or the Committee to keep them back to a proper distance. A space properly roped off and guarded would have been of much assistance, but that is not always possible.

The unevenness of the ground was an obstacle to seeing the horses move to the best advantage, but it was as good as we could obtain, and all were sent over the same ground.

After having carefully examined all the horses, and taken the necessary notes, the Committee withdrew to a part of the field where they could be by themselves, and soon gave their written votes upon the first premium, and it was awarded as above stated.

The vote for the second resulted in a tie at the first ballot, but the next decided the award after some discussion. Then after two more votes, with discussion between them, the third premium was decided.

All the horses were first examined for marks of unsoundness. Splints were found on three of the rejected animals; some of these had interfering marks, and one had a peculiar action of the off hip.

Then each was driven at a good road gait, so that his action could be seen, and how readily he obeyed the rein and voice.

The drivers were also requested to stop their horses, lay down the reins, get out and walk slowly around their team, get into their vehicle again, then take up the reins, and after that start their horses.

We were much pleased with Mr. Winkley's horse, which had a fine gait, was perfectly gentle, powerful, a good size for general use, was in the prime of life, and had many marks of being an extremely good animal. Unfortunately a very slight splint was cause for his receiving no premium.

Mr. Todd's five year old seemed a pattern of a useful

horse, which farmers would do well to copy. He appeared to be perfectly sound, capable of doing any work well, either on the road or in the field. The objection to him was that he still had some of the movements of a colt. He was thoroughly gentle, and was said to possess much endurance in travelling long distances.

It should be stated that the horse which took the second premium, was a stallion until a year ago, when he was cut at 10 years old.

Respectfully, for the Committee,

FRANCIS H. APPLETON, *Chairman.*

FARM AND DRAFT HORSES.

The Committee on Farm and Draft Horses, submit the following awards :—

W. A. Dane, Hamilton, 1st premium, $15; W. H. Butters, Methuen, 2d premium, $12; Joshua N. Kent, Newbury, 3d premium, $10; D. L. Goodrich, West Newbury, 4th premium, $6.

T. T. Paine, D. T. Morrison, J. Longfellow, D. Bradstreet—*Committee.*

PAIRS OF DRAFT HORSES.

The Committee report that nine pairs were entered; eight appeared on the ground; all did their work well, considering the space allowed them by the crowd, which rather interfered with their performance.

Awards.—Oliver Stevens, No. Andover, 1st premium, $15; George W. Bray, Newbury, 2d premium, $10.

Amos Poor, Hermon Phelps, David Knowlton. George S. Hawkes, Bowman Viles—*Committee.*

COLTS—FIRST CLASS.

The Committee on Colts of the First Class have awarded the premiums as follows:—

Four Years Old—Henry Riley, North Andover, first premium, $12; George E. Davis, North Andover, second premium, $8; S. P. Bradley, Haverhill, third premium, $5.

Three Years Old—Goodwin Brothers, Lawrence, first premium, $10; George W. Russell, Lawrence, second premium, $5.

Sherman Nelson, Nathaniel Gage, Thomas K. Leach—*Committee.*

COLTS—SECOND CLASS.

The Committee award as follows:—

Two Years Old—S. M. Titcomb, West Newbury, first premium, $8; Geo. B. Bradley, Methuen, second premium, $5.

Yearlings—Peter Holt, Andover, first premium, $6; H. M. George, Saugus, second premium, $4.

GEO. W. DUNCAN, *for the Committee.*

SWINE.

The Committee on Swine, report:—

Small Bone Hogs.—Breeding Sow: First premium, J. D. W. French, North Andover, $10; second premium, B. H. Farnham, North Andover, $6. Boar: First premium, Charles Perley, Boxford, $10; second premium, J. D. W. French, North Andover, $6.

Large Bone Hogs.—Breeding Sow: First premium, Albert Berry, North Andover, $10; second premium, Daniel Carlton, North Andover, $6. Weaned Pigs: First premium, Albert Berry, North Andover, $10; second premium, J. F.

Colqorhoun, Lawrence, $6. Boar: Second premium, Levi Emery, Lawrence, $6.

C. C. Blunt, *Chairman.*

STATEMENT OF J. D. W. FRENCH.

To the Committee on Swine:—

I enter for premium in second class (small bone), my small Yorkshire Boar, "Weston," farrowed May 9, 1877; Sire, Middlesex; Dam, Cherry, by Duke of Yorkshire, imported. 2d Dam, Minnie, bred by Jacob Dove, England.

I enter for premium in first class, for best Breeding Sow, my Grade Chester Sow, with 9 pigs by my small Yorkshire Boar. These pigs were farrowed Sept. 14.

J. D. W. French.

SHEEP.

The awards of the Committee are as follows:—

Charles Perley, Boxford, for Buck, first premium, $8.

Chas. Hazelton, Bradford, flock Sheep and 2 years old Buck, first premium, $10.

Jasper Rea, James Marsh, E. C. Upton, Albert Kimball—*Committee.*

POULTRY—FIRST CLASS.

Light Brahma Fowls—W. M. Ward, Peabody, first premium, $3; C. L. Beckett, Peabody, second premium, $1.50.

Light Brahma Chicks—C. L. Beckett, Peabody, first premium, $3; W. M. Ward, Peabody, second premium, $1.50.

Turkeys—J. D. W. French, first premium, $2.

Geese—C. W. Hatch, first premium, $2.

Ducks—C. A. Andrew, first premium, $2; C. W. Hatch, second premium, $1.

C. D. Ordway, Daniel Buxton, J. L. Colcord, James Wilson—*Committee.*

POULTRY—SECOND CLASS.

The Committee award as follows:—

Plymouth Rock Fowls—S. F. Chase, West Newbury, first premium, $3; L. F. Weston, Danvers, 2d premium, $1.50. Chicks—S. F. Chase, West Newbury, first premium, $3; S. F. Chase, West Newbury, second premium, $1.50.

White Leghorn Fowls—F. J. Bradley, Methuen, first premium, $3. Brown Leghorn—F. J. Bradley, Methuen, second premium, $1.50. Chicks—G. J. Johnson, Rowley, first premium, $3; E. H. Barnard, Andover, second premium, $1.50.

Silver Poland Chicks—Geo. Riley, No. Andover, first premium, $3.

B. B. Red Game Bantam Fowls—E. E. Smith, Haverhill, first premium, $3. Chicks—H. W. Field, North Andover, first premium, $3.

The Committee would, in addition to their report of Award of Premiums, beg leave to submit for your consideration, the following:—

That, as the success of all effort to establish the Fair and Cattle Show of Essex County, in the front rank of county fairs, has been due in the past to the advanced ground taken by the trustees, in offering generous premiums, and adopting new rules in regard to exhibitions, in conformity with the requirements of the times, and as the desideratum of these fairs is the improvement of all agricultural pursuits; and, as the poultry business of the whole country has undergone a very marked change within a period of ten years,—almost destroying the value of the rules laid down by the society, for judging poultry,—your Committee would recommend that a change be made in the manner of Award of Premiums, for the following reasons:—

1st. The breeding of fowls for purity of blood and excellence of points—as is the case in herds of Jersey, Ayrshire, and other cattle,—has become a business of considerable importance, as is illustrated by the very remunerative prices paid for fancy fowls, scoring 90 to 95 points in a possible 100. We shall see, by giving a moment's thought to the subject,

that the object of those who exhibit fancy fowls at fairs, is not the direct money value of the premiums obtained, but their far greater value as *descriptive adjectives* in advertising their stock for sale throughout the country. It is, then, not only our duty to ourselves to protect the reputation of the society, as one qualified to confer such premiums, in accordance with the acknowledged standard for judging poultry, in use by all poultry associations; but it becomes a duty, a point of honor, as it were, between man and man, because, perchance, some poultry breeder in a distant State, seeing an advertisement containing the award, buys, and pays a good price for our first premium fowl, expecting that we, as good judges, have made the award as his society have made theirs, in accordance with the said standard. We therefore recommend that the poultry exhibit be divided into two distinct classes, the first class to consist of those bred as fancy fowls, whilst the second class shall be composed of those bred as egg producers.

2d. That the standard of authority for judging poultry be changed from *Halstead* to the "American Standard of Excellence," now in use by all poultry societies.

3d. That the Board of Judges shall be chosen with regard to their special knowledge of the different varieties for which premiums are offered.

4th. That all fowls exhibited shall be entered with the Secretary, and designated only by entry number and variety exhibited, until after the award of premiums.

Recommended—That the second class shall consist of poultry kept for profit from eggs and meat. That this is the direct poultry business it is needless to dispute, as a glance at statistics gives us no chance to gainsay that it is an important farm adjunct. In New York city, in 1870, the sale of eggs amounted to 19,900,700 dozen at a value of $4,928,219.20. In 1873, 31,148,007 dozen, amounting to $6,976,603.25, showing an increase of nearly 50 per cent. in three years. Somebody raised and sold them, and somebody will raise and sell eggs and poultry, thereby increasing the productive industry of the country by a very considerable sum yearly, besides making the old farms look pleasanter to the boys and girls. It might be said here as well as anywhere, that all these little things which tend to make life pleasanter to the boys and girls *on the farm*, should be en-

couraged to the extent that they may choose to stay there, rather than to rush to the city to mingle in the great whirl of financial ruin. We therefore believe that it is for the interest of the County of Essex that this society shall so encourage these small endeavors of its patrons and exhibitors, that a spirit of competition may be aroused, that the best manner of feeding, the best variety of fowl, and all the different details of poultry management, may be brought out.

We therefore recommend that special premiums of $5.00 as first and $3.00 as second, shall be offered the exhibitor who shall obtain the greatest results for a given time, from a given number of fowls, a trio of said fowls to be entered for exhibition at the fair, together with a written statement of results obtained, manner of treatment, etc., the same rules of entry to apply as are suggested for fowls of the first class.

We would also suggest that an assistant marshal shall take charge of the arrangement of the different coops of fowls, so that the several varieties may be kept together, thereby lessening the work of the judges, and increasing the effect of the show.

W. H. Allen, *for the Committee.*

PLOUGHING—DOUBLE TEAMS.

The Committee on Ploughing with Double Teams have attended to their duty, and would report the following awards :—

Jaques & Bray, Newbury, first premium, $12; Joseph Goodrich, West Newbury, second premium, $10; Edward Adams, North Andover, third premium, $9; Frank J. Bradley, Methuen, fourth premium, $8.

Sherman Nelson, Nathaniel Gage, David Smith, C. K. Ordway—*Committee.*

PLOUGHING—SINGLE TEAMS.

The Committee on Ploughing, Single Teams, report but two entries; only one appeared on the ground, that of R. T.

Jaques, of Newbury, with No. 16 Hussey plough. Mr. Jaques had a team well trained to their business, had a good plough, and knew well how to manage it. He performed his work well, and at a uniform depth of about seven inches, full an inch more than required by the society.

The Committee award to R. T. Jaques, of Newbury, the first premium of $10. Not because he was the only competitor, but because we thought he would have obtained it, if there had been two or three competitors, which the committee regret there were not.

Horace C. Ware, D. F. Harriman, John L. Colcord, John W. Allen—*Committee.*

PLOUGHING WITH HORSES.

The Committee award as follows:—

Paul T. Winkley, Newburyport, first premium, $12; H. M. Goodrich & A. L. Plummer, West Newbury, second premium, $10; A. T. Newhall, Newburyport, third premium, $8; T. O. Wardwell, North Andover, fourth premium, $6; R. S. Bray, Newbury, fifth premium, $4.

Otis F. Putnam, *Chairman.*

PLOUGHING—THREE OR MORE HORSES.

The Committee were unanimous in giving the first premium of $10 to Sidney F. Newman & J. N. Kent, of Newbury; second, $6, to Geo. W. Bray, of Newbury.

Ansel W. Putnam, Wm. B. Reynolds, J. B. Tewksbury, G. S. Phippen—*Committee.*

In addition to the report made in the ploughing field, by the Committee on Ploughing with three or more horses, the Chairman wishes to say, that this being the first time premiums have been offered for ploughing with such teams, the

rules by which committee and ploughmen should be guided do not seem to be correct and definite enough to meet the case. One of the rules of the society is, that "only double ox teams shall have drivers." I think it well to adhere strictly to that rule in the future; but as the ploughmen all come expecting to plough with a driver, and with one exception were not prepared to plough at all without a driver, it did not seem best to enforce the rule. Then again, these teams of three or more horses are practically double teams, and should be required to do the work of double teams, but the rules only required them to do the work of single teams, that is, to plough six inches deep, and though all the work was well done, there was none of it good, practical, everyday work, because it was not economical; it is not economy to use a double team and two men to do work that can be as well done with a single team and one man.

The team, driver, ploughman and plough, which took the first premium, each and all of them did as artistic work as I have ever seen. The team, driver and ploughman which took the second prize, seemed to do as good work as the first, but the plough they used was not in condition to make as handsome work as the other. These were both four horse teams. The team with three horses abreast worked well and were well handled, but the ploughman failed to do artistic work in two respects. The first was taking more land than his plough would at all times turn well over to its place, the sod doubling down and leaving cavities which it would take considerable harrowing to fill up. The other respect, of no practical importance except the very important one of good looks, was that he did not straighten the crooks made when cutting out the lands, but continued to plough as crooked as the copy set for him to work by.

Perhaps he thought it best to imitate the copy as exactly as possible; at any rate I can thank him for doing it, for it gives me an opportunity to say that ploughing out the centres of lands after they have been marked out, looks to me like

apprentices' work—a master workman can cut out his own lands.

I know of no direction in which a little more knowledge would be of so much practical benefit to the farmers of Essex County, as a little more knowledge of the art of economical ploughing. There are very few farmers in the County who can take a pair of spirited horses, drive the team themselves, and cut out lands, or furrow out with one or two horses, or cultivate their crops, as well without a driver as with one; and yet there are very few farmers in the County, who, if they had a little more practical knowledge of the art of holding and driving at the same time, would not be perfectly independent of drivers for any of their ploughing or cultivating, for they would soon learn what some have already learned, and that is, that they can drive better when holding the plough or cultivator, than any one can drive for them.

I wish to ask if it is not time for our society to begin the work of educating the farmers of the county, so that they can cut our their lands and do all their ploughing and cultivating without a driver.

I wish to ask if it would not be well for the society to offer premiums for the best single furrow ploughed in sod lands? the team and plough to be furnished by the Committee; all competitors to use the same team and plough; and also, if it would not be well to offer premiums for the best three or five furrows with a single horse, as in marking out for potatoes. This work could be done after the ploughing match, if the land was well harrowed.

Ansel W. Putnam, *Chairman.*

PLOUGHING WITH SWIVEL PLOUGH.

The Committee report:—

Wm. A. Russell, Lawrence, first premium $12.

Wm. B. Carlton, *Chairman.*

AGRICULTURAL IMPLEMENTS.

The Committee award as follows :—

Whittemore Bros., Boston, best collection of Implements, premium, $15.

Whittemore Bros., Boston, for Grant Hay Cutter, gratuity, $3.

Parker & Gannett, Boston, second best collection of Implements, premium, $10.

E. E. Lummus & Co., Boston, third best collection, $5.

Frank Ayer, Boxford, Ox Yoke, gratuity, $3.

Warren A. Bailey, Andover, Stone Lifter, $3.

Urius Urry, North Andover, Cultivator, $1.

Honorable mention is made of the Richardson Manufacturing Company, of Worcester, New Model Buckeye Mower; also of Whittemore Bros. Champion Cider Mill.

Our attention was particularly drawn in the exhibit of the Messrs. Whittemore Bros., of Boston, to the Oliver's Chilled Ploughs, manufactured at South Bend, Ind., and introduced into New England by this house last November. The metal is the hardest and finest grained of any metal used in ploughs, and the only one perfectly adapted for use in all soils. The plough is of very light draft, easily adjusted, does excellent work, and is very durable, and must come into extensive use as it becomes known. Also well adapted for meadow land; the team walking on the sward. This house also show their Champion Wheel Rake, with patent sled runner teeth, so made that they do not scratch up the ground and dust the hay, a decided improvement over all other steel-tooth rakes. This is very simple in construction and can be easily handled by a boy.

Walter A. Wood's new enclosed gear Mower, was also shown. The well earned reputation of this company being a sufficient guarantee of its excellence both in workmanship and working qualities in the field.

The Victor Lever Hay Cutter is a new and simple implement. The knife has a heavy iron handle, which materially decreases the labor of cutting. It must be an extra machine for cutting corn stalks.

The Committee make honorable mention of the large exhibits of Parker & Gannett. Would recommend the attention of farmers to their Nourse new IXL Swivel Ploughs. They claim that to-day it is *the plough* for both side hill and level land, that it is 25 per cent. lighter draft than any other side hill plough.

The Buckeye Mowing Machine has strong claims on the farming community for strength, durability and light draft. They are the Boston agents, having sold in 22 years 6,000, every one giving perfect satisfaction.

We were favorably impressed with the Bay State Horse Rake. It has just won the medal of honor at Paris. It has all the latest improvements.

The Lion Plough is claimed by them to be the best land-side plough in use. Besides, they claim to have had all the improved ploughs in the market. They made a worthy exhibit of Root Cutters, Meat Choppers, Prize Blanchard C. C. M. Churn. In fact their exhibit comprises nearly every thing necessary to a well regulated farm.

The Committee would do injustice to the firm of E. E. Lummus & Co., not to mention their fine exhibit, although small in numbers. Our attention was called particularly to the Randall Harrow, so well known, having been many years in the market. It has undergone many improvements since it was first offered to the public, and now they claim for it superiority to any harrow in use.

The Randall Corn Hoe is a new machine. It is claimed by the manufacturers that it will supersede all others, it being made to straddle the row. It is on the same principle as the Randall Harrow.

They also exhibit the New Model Warrior Mower, which is the old Warrior much simplified and reduced in weight, and

the King of the Lawn, lawn mower, which is comparatively new in the market. The main features of the machine are its simplicity and cheapness.

There being no opportunity to test the different Mowing Machines in the field, the Committee cannot make as thorough examination of them as they otherwise would like to. We have no doubt that most mowing machines, when new and in good order, will do the work required of them, but the points most desirable to the farmer are simplicity of construction, ease of management, and durability. In our opinion the New Model Buckeye, entered by W. A. Kimball, possesses many desirable points, from the fact that it has stood the test of time, and we can with confidence recommend it to the farmers of Essex County.

Leverett Bradley, George Buchan, John Swinerton, T. K. Leach—*Committee.*

CARRIAGES.

The Committee make the following awards :—

A. J. Henly, Boxford, Two Horse Wagon, gratuity, $2; J. W. Joyce, Lawrence, Wagon, gratuity, $2; J. W. Graham, Lawrence, Wagon, $2; D. E. Gale & Co., Salisbury, Jump Seat Wagon, gratuity, $3; Samuel G. Bean, Andover, Old Sleigh, gratuity, $1.

T. K. Leach, Aaron Sawyer, William Gunnison—*Committee.*

DAIRY.

There were ten specimens of butter presented for premium, the most of which were of superior quality, and it was with some difficulty that the Committee could decide which were entitled to the several premiums. After consid-

erable deliberation they concluded to recommend the following premiums :—

John J. Downing, Andover, first premium, $10 ; Mrs. John Day, Boxford, second premium, $8 ; S. R. Griffin, Groveland, third premium, $6 ; E. H. Jenkins, Andover, fourth premium, $4.

There were but two specimens of cheese exhibited for premium, both of which were of superior quality, and the Committee, could they have done so, would gladly have divided the two premiums equally between them. As this could not be done, they would recommend the premiums as follows :—

D. L. Goodrich, West Newbury, first premium, $8 ; John Lefavor, Danvers, second premium, $5.

The majority of the Committee being ladies, were all present in season, as they usually are on all important occasions, but the Chairman, a gentleman, was not present. After waiting a long time, the writer was requested to aid and assist them, as they were all inexperienced in the business. We readily accepted their invitation, knowing them to be of good judgment and intelligence. It proved rather a pleasant task, good company, and as we were in near proximity to the bread that had been examined by another committee, it was said that the quality of the butter could be better tested when used with bread.

Joseph How, *for the Committee.*

STATEMENT OF JOHN J. DOWNING.

To the Committee on Dairy :—

The ten pounds of Butter entered for premium, is made in the following manner :—Cream raised by the Cooley system ; churned every day in a Davis Oscillating Churn ; time, from forty-five minutes to one hour ; Butter washed in churn until most of the butter milk is removed, then taken out and balance worked out by hand and salted, use from one-half to

one ounce, according to taste of customers; put up in any style to suit customers; delivered twice per week, summer and winter; number of cows now in milk 21, Jerseys and Grades; feed at present, grass and Indian meal, from two quarts to one peck per cow.

STATEMENT OF MRS. JOHN DAY.

To the Committee on Dairy:—

I enter for premium five pounds of September Butter.

This Butter was made from the milk of Ayrshire cows that have had no feed through the season but pasture grass; it was taken from a churning of seventeen pounds, churned within a week; the milk is strained into tin pans—about three quarts in each pan—and set in a clean, cool room in the cellar; it is set on iron bars, instead of shelves, (so there can be free circulation of air around the pans, and the bars are much easier to keep clean than wooden shelves); twenty-four hours after the milk is set the cream is skimmed into tin pails, and the pails are set near ice; as cream is added to the pails each day, it is well stirred. When sufficient cream has been gathered to make fifteen pounds of butter or more, it is churned in a Blanchard churn, the butter is taken from the churn and *all* the butter milk that can possibly be worked out of it is got out then; it is then salted and allowed to stand until the next morning, when it is worked over and made into lumps like the sample I send you. I have made butter by this method for *more than fifty years*, and have never failed to have good, sweet butter.

STATEMENT OF D. L. GOODRICH.

To the Committee on Dairy:—

I present for your examination fifty-two pounds of Cheese. The following is the process of making:—Strain the evening's milk, warm it in the morning and add to the morning's milk, making it about blood warm; then add the rennet, no more than enough to form a curd in twenty or thirty minutes;

let it stand about an hour, cut and drain thoroughly, scald with water, chop fine, add one cup of salt to sixteen pounds of curd, and press twenty-four hours.

BREAD AND HONEY.

The bread offered for inspection was nearly all of good quality. In some instances, no statement being given of the manner in which the samples were made, in accordance with the rule of the society, no award could be given. After careful examination and discussion your Committee recommend the following gratuities :—

Mrs. D. B. Fogg, Methuen, $2; Mrs. G. M. Stoddard, Lawrence, $1.50; Mrs. Willard Messer, Lawrence, $1; Miss Mary Kennedy, Lawrence, $1; Mrs. Parker Cross, Methuen, $1; Mrs. N. E. Ladd, Groveland, $1; Mrs. M. A. Bennet, West Andover, $1; Master Harry Tucker, Lawrence, 75 cents; Bertha L. Childs, Lawrence, 75 cents; Alice M. Hunkings, Lawrence, 75 cents; Alice M. Rea, Andover, 75 cents; Mrs. Joseph Poor, Andover, Cream Cakes, 50 cents; Mrs. M. N. Hindish, Cake, 50 cents; Mrs. J. H. Spofford, Lawrence, 50 cents; Mrs. Hannah Lenney, North Andover, 50 cents; Fred Peet, Lawrence, 50 cents.

Mrs. Joseph Howe, Mrs. E. W. Jacobs, Miss Lucy A. Blunt, Nathaniel Lambert, G. W. Hill—*Committee.*

PEARS.

Your Committee on Pears attended to their duties and submit the following report :—

The whole number of Exhibitors, or Entries of Pears, 62; number of Plates of Pears exhibited, 285; number of varieties 68; Amesbury exhibited 29 plates of 25 varieties, from 2 persons, for which $25 in premiums were awarded; An-

dover, 9 of 7 from 4, $1 gratuity; Bradford, 8 of 7 from 3, $6 premiums; Danvers, 44 of 34 from 4, $13.50 premiums; Georgetown, 3 of 3 from 1; Gloucester, 5 of 5 from 1; Groveland, 6 of 4 from 4, $3 premiums, $1 gratuity; Haverhill, 25 of 20 from 3, $7.50 premiums, $2 gratuity; Lawrence, 66 of 22 from 26, $13.50 premiums, $7.50 gratuities; Manchester, 1 of 1 from 1, $3 premium; Methuen, 1 of 1 from 1; Newbury, 1 of 1 from 1, $1 gratuity; Newburyport, 33 of 32 from 2, $7 premium; North Andover, 14 of 14 from 3, $2 gratuity; Peabody, 33 of 27 from 3, $12 premiums, $5 gratuities; Rockport, 3 of 3 from 1, $1 gratuity; Topsfield, 4 of 4 from 2.

Of varieties of pears *recommended by the Society*, there were 13 plates of Bartletts, 9 of Belle Lucrative, 12 Beurre Bosc, 12 Beurre Clairgeau, 16 Beurre d'Anjou, 11 Buffum, 2 Clapp's Favorite, 14 Duchesse d'Angouleme, 3 Dana's Hovey, 4 Golden Beurre of Bilboa, 9 Lawrence, 23 Louise Bonne de Jersey, 5 Maria Louise, 14 Onondaga; 3 Paradise d'Automne, 17 Seckel, 1 St. Michael Archange, 15 Sheldon, 7 Urbaniste, 9 Vicar of Winkfield, 7 Winter Nelis.

There was one exhibitor of 34 varieties, 1 of 33, 1 of 24, 1 of 21, 1 of 19, 2 of 11, 1 of 10, 1 of 8, 1 of 6, 4 of 5, 4 of 4, 10 of 3, 9 of 2, and 25 of 1, to whom were awarded premiums and gratuities as follows, viz. :—

First premiums for best dish of 12 specimens, of certain varieties of Pears, for which special premiums of $3 each are offered.

Bartlett, Mrs. B. McAllister, Lawrence; Belle Lucrative, J. Henry Hill, Amesbury; Beurre Bosc, Chas. B. Emerson, Bradford; Beurre Clairgeau, Peter Wait, Danvers; Beurre d'Anjou, John V. Stevens, Peabody; Buffum, M. B. Kenney, Lawrence; Duchesse d'Angouleme, Dr. George W. Sargent, Lawrence; Dana's Hovey, E. F. Webster, Haverhill; Golden Beurre of Bilboa, John Price, Manchester; Lawrence, Wm. H. Huse, Newburyport; Louise Bonne de

Jersey, J. Henry Hill, Amesbury; Marie Louise, A. J. Hubbard, Peabody; Onondaga, S. B. George, Groveland; Paradise d'Automne, John V. Stevens, Peabody; Seckel, S. B. W. Davis, Lawrence; Sheldon, E. F. Webster, Haverhill; Urbaniste, E. Bradstreet, Danvers; Vicar of Winkfield, A. J. Hubbard, Peabody; Winter Nelis, Albert Kimball, Bradford.

The only plate of Clapp's Favorite Pears worthy of the premium, was exhibited by D. W. Low, of Gloucester, who, being one of the Committee, was not entitled to it. Other varieties, for which special premiums are offered, were not exhibited, being past their season, or else were not of such quality as to be deemed worthy of it.

For each dish of 12 best specimens of any other variety, $1.50. Deemed worthy by the Committee:—Howell, E. F. Webster, Haverhill; Flemish Beauty, M. B. Kenney, Lawrence; Beurre Hardy, Peter Wait, Danvers.

Best dish of 24 specimens, premium, $6:—Beurre d'Anjou, J. Henry Hill, Amesbury.

Best collection of 20 varieties, premium $8, to J. Henry Hill, Amesbury.

Best collection of 15 varieties, premium $6, to Peter Wait, Danvers.

Best collection of 10 varieties, premium $4, to Wm. H. Huse, Newburyport.

Gratuities for Collections: J. V. Stevens, Peabody, $3; E. F. Webster, Haverhill, $2: A. J. Hubbard, Peabody, $2; Theron Johnson, North Andover, $2; Daniel Saunders, Lawrence, $2.

Gratuities of $1 each for Beurre d'Anjou, Ella C. Corliss, Lawrence; Onondaga, John W. Marshall, Rockport; Urbaniste, Wm. W. Perkins, Newbury; Seckel, Baldwin Coolidge, Lawrence; Marie Louise, Daniel Cummings, Andover; Beurre Hardy, George E. Taylor, Lawrence; Beurre Clairgeau, John O'Brien, Bradford; Sheldon, Mrs. D. H. Stick-

ney, Groveland; Louise Bonne de Jersey, Samuel Barrett, Lawrence; Buffum, H. H. Hill, Lawrence.

The Pear, we believe to be the favorite fruit of to-day, and we recommend to any one setting out trees for profit, to devote as much land, *at least*, to the raising of Pears as he does for his Apple orchard, for we consider it, *when not grown in too many varieties, and only of those varieties that are adapted to the soil, to be the most profitable crop that can be raised.*

The Pear tree, on soil adapted to its growth, is very long lived and very prolific. There are trees on record of immense size and age, abroad, several of which are known to be upwards of 400 years old, one in England, known as the Perry pear, on account of 15 hogshead of *perry* having been made for several years, from its fruit, in a year. (The juice of the pear, when pressed out the same way as cider, is called "perry," and is esteemed by many persons for its richer qualities.) This tree, in 1805, covered more than an acre of land, the branches bending down and taking root, thus produced others. In a late work on trees this was stated to be in fine health, though reduced in size.

We have in our own country very old pear trees, two of which, most famous, are the *Stuyvesant* and *Endicott* pear trees. The *Stuyvesant* pear tree was planted nearly two hundred and fifty years ago, by the old Dutch Governor of New York, and was standing in the heart of the city, until within a few years, when it was cut down and the place built upon—the fruit being a very pleasant summer pear. The *Endicott* was planted by Governor Endicott, the first Governor of Massachusetts, 245 years ago, on his estate, now owned by Mr. Page, in Danversport, in this county. The tree is yet alive and vigorous, having borne about two bushels of pears the past season.

These pear trees were introduced from the old continent, as the tree is not a native of this country, although now, some of our best pears are natives, such as the Seckel, Shel-

don, Lawrence, Dana's Hovey, Onondaga and Clapp's Favorite, recommended by our society for culture. Other varieties of excellent quality, which have originated in this country, are not so well adapted to our soil and climate.

One of the largest pear trees in this country, as reported in Hovey's Magazine, is growing in Illinois, which, when not more than forty years old, one foot above the ground its trunk was *ten feet in girth*, and at nine feet from the ground, *six and a half feet* in girth, its branches extending over an area sixty-nine feet in diameter. In 1834 it yielded *one hundred and eighty-four bushels* of pears. The tree is stated as enormously productive always, the fruit pretty large, of fair flavor, and ripening in early autumn.

Your Committee noticed, in the Exhibition Hall, that while the fruit of some exhibitors was very fine, the same varieties by others, were greatly inferior, and as each are likely to show their best fruit, others in the county have, without doubt, the same varieties entirely unfit for exhibition.

To enable your Committee to ascertain the practical experience of the different fruit growers in raising their pears, that the information might be reported to the Society, the following questions were sent to each exhibitor, as, also, with slight alteration, to members of the Committee and a few of the other fruit growers who made no exhibit this year, of their pears; viz. :—1. What different varieties of pears did you exhibit at the County Fair at Lawrence? Indicate on what kind of tree raised, by marking S for Standard, and D for Dwarf, over each variety. 2. What kind of soil? 3. Sub-soil? 4. How often is soil enriched? 5. What with? 6. How much do you prune, and when? 7. Have your trees been troubled with the blight or insects? 8. If so what remedy have you tried? With what success? 9. What are the most profitable trees to set out, Standards or Dwarfs? 10. Why? 11. When do you pick your different varieties of pears? 12. How long afterwards are they ripe for eating? 13. How do you keep them best and longest? 14. What

ten varieties are recommended by you for profit? and why? 15. Give such other information as you think may be of interest to others.

The above fifteen questions were sent in such a form that they could be readily answered on the same sheet. Had it not been that the varieties exhibited were, in most cases (as should always be in all), entered upon the Entry Book, it would have been impossible to have ascertained, except from each exhibitor afterwards. Even if a few of the questions had been answered *by all*, it would have shown that *each was willing* to contribute even a little to the stock of general information, which our Society is organized to promote, and which should be considered the duty of every Committee to obtain, regarding the special object of which it is made the judges, and report it. The mere looking at an object in the pens of the Fair Grounds, or on the tables of the Hall, is only a gratification to the eye; *to know how* the objects have reached such perfection as to gratify the eye, imparts knowledge, that too of the very best kind, it being the practical experience of exhibitors from all parts of the county, whose information of their manner of feeding, cultivating, or making, to arrive at the result exhibited, is the most valuable, and most desired by our Society, and which each exhibitor should feel it a pleasure, as well as a duty, to impart unsolicited, to be made use of by the Committee in their report. The good points of such information, adopted by others, will not *injure him*, its only result would be to *raise the standard of excellence.*

Some of the replies to the questions asked, are appended as part of this report, and will be read with interest and instruction (especially that of Mr. John O'Brien, of Bradford), for much valuable information can be derived from them.

The almost unanimous reply as to Standard or Dwarf trees *for profit*, is in favor of Standards, on account of their larger and thriftier growth, longer life, greater productiveness, and requiring less care, being more hardy than the Dwarf.

The Duchesse d'Angouleme is the exceptional pear, *that* grows better on Dwarf stock. There are others that produce better fruit on Dwarf. If an amateur wishes a large variety in a small space, to fruit quickly, Dwarfs of some varieties are good for ten or twelve years, if well cared for.

The *soil* for pear trees should not be too rich, if it is, they will grow too rank, be more liable to blight, and less likely to form strong fruit buds. You cannot starve them, however, no more than you can any crop, and expect it to succeed. Keep them thrifty?

We would urge upon all, who have not already tried it, the use of a pen or hogsheads, into which all the sweepings of the house, chamber slops, meat bones, old shoes, leaves and other refuse of the house and garden, which, when scattered around the house, make the yard untidy and unwholesome, and which would, when accumulated in a mass, and deodorized with fresh earth thrown upon it from time to time, be a surprise, in the amount and richness of the compost that would be so beneficial for the fruit trees.

The soap-suds of the washing day of an average sized family, is equal to a wheelbarrow load of manure if emptied around the grape vines and fruit trees.

Ashes from coal or wood,—from the latter being best,—are excellent for fruit trees. Coal ashes put around trees, say ten inches to one foot high at the trunk, extending back two or three feet, is recommended as a good protection to the roots, like mulching, giving the trees a better start in the Spring.

Top dressing in the Fall is by far the best time and mode of manuring fruit trees, whenever they are not making a thrifty growth. We think that trees when so treated are less likely to blight than where manure is ploughed or dug in. We should not advise manuring heavily at any one time, but give them a slight top dressing every Fall with *well rotted* manure, (as straw, or coarse manure, harbors mice), and it will be found more favorable to thriftiness, productiveness, and ex-

emption from disease. One or two shovelfuls of fresh cow manure applied to the trunk of the tree, we have tried with success against mice in winter.

Change of soil by transplanting, accomplishes astonishing results sometimes. We have known of a tree barren for years taken up and transplanted a hundred feet, to soil dryer and more gravelly, and producing fruit abundantly afterwards. A Bartlett pear tree, considered worthless, growing in the border of a cold grapery, in rich deep garden soil, on which the fruit, not much larger than an English walnut, was black and badly cracked, was given to our Chairman by Dr. Davidson, in Gloucester, to try the effect of change of soil. It was taken two miles away, and planted in a strong, clayey, virgin soil, just broken up. The result was, that a *new vigorous life* was imparted to the tree, and this season it produced from two to three bushels of as fine pears as any one need desire. The first year that it fruited, after removal, not a pear was cracked, all were of fair size, but a large number were gnarly; they have improved in size and quality every year since. The tree has grown to thrice its original size, and is very prolific every year.

The right kind of soil for the right kind of tree, will produce *superior* fruit on that tree, wherever located, although protection from bleak winds adds greatly to the effect of the soil. We think the soil in and about Lawrence is of that kind of soil for a number of varieties.

George E. Taylor, of that city, who had a plate of fine Beurre Hardy pears in the Fair, says of his fruit, "I sold my Bartletts before the Fair, *fifty of which filled a half bushel.* I had some very nice Duchesse, *many weighing sixteen ounces apiece*; the trees are all standards, growing between houses, on low, sandy soil." Mrs. Benj. McAllister, of same city, who had the finest Bartlett pears, and was awarded the premium, states they were grown on a Standard tree; that she "simply let them grow in the garden until Fall, and then picked them."

The remarkable size and quality of Dr. Kenney's fruit, raised in same city, attracted much attention. *Flemish Beauties*, that grow so badly cracked in most parts of the county, and are considered almost worthless, were there of great size and very fair. He states that they are of the finest quality, and the richest pear he has, in a variety of ten or twelve kinds, *all of which* produce the same good quality, according to their kind, as those exhibited.

His manner of setting out and treatment of his trees afterwards, probably had a considerable effect upon the result, for when he set out the trees, about sixteen years ago, he had holes dug about four feet in diameter, and two and a half feet deep, then filled in about one foot of compost, bones, old shoes, lime and old scraps of iron, then covered that with about six inches of soil, then set his trees and "filled in with *rich soil*, which in Lawrence, and all about there, *is the common soil.*" In addition to enriching the soil around the trees by spreading on sink deposits every two or three years, he also spreads on the ground over the roots; not very near the body, about a pint of iron turnings, or filings, with half a pint of salt, around each tree, every four or five years. His trees are protected from all winds except from the east, and he prunes off half the previous year's growth in the spring.

We think that iron is of great benefit to pear trees, as well as other kinds of fruit trees, our Chairman having used the sweepings of a blacksmith's shop, where horses are shod, containing old nails, bits of iron, hoof chips, &c., around apple and pear trees, with an occasional dressing from the sink drain, to much advantage, as regards the size and fairness of the fruit, having readily disposed of what Clapp's Favorite and Bartlett pears he had to sell, at from $2.25 to $2.50 per bushel, and several bushels of "Duchesse" at $3.00, which in contrast with apples, in such abundance that twenty to forty cents per bushel were the selling prices, with two hundred bushels for cider, and notwithstanding the So-

ciety's premium awarded him for the best fifteen varieties of apples, may be added, leaves a large margin in favor of pear culture, for the area occupied, although it detracts nothing from the value of the dressing used for both kinds of trees.

Opinion differs in regard to pruning; some advocate much, others little or none; some at certain times of year, and others at any time; we think, however, that the majority decide upon the Spring as the best time for it, though we believe that at any time between Fall and Spring will answer as well. Whenever done, it should not be done harshly; it is better, when the growth requires it, to prune moderately *every* year sufficient to keep the tree stocky and able to bear up under the weight of its fruit, and open enough to obtain the benefit of sun and air to mature it. It is also of great benefit to trees and fruit, to thin out the fruit, especially on Bartlett, Louise Bonne, Vicar and Seckel pear trees, as those varieties are apt to overbear.

The blight, now so well known in pear culture, is cured best by the free use of saw and knife, cutting away the part affected until sound wood is reached, covering large wounds on the tree with a dressing of clay and cow manure, or a coating of linseed oil, both of which have been tried with good success by your Committee and others. Our Chairman had a Bartlett pear tree about four years old, blighted on the westerly side of its trunk, commencing about nine inches from the ground, extending upwards over eighteen inches, and extending around about one-third of the circumference. All of the affected part was cut out, and a coat of linseed oil applied, resulting in having the tree to-day, as good as any in growth and fruit, and, although the growth of the bark has nearly covered the wound, the symmetry of the tree is marred. In most cases, however, the disease and its remedy are a *serious* drawback to the welfare of the tree. The slug and most insects, *if they are taken in season*, on almost all kinds of trees, can be got rid of by a dusting with wood ashes, or air slacked lime, when the tree is wet.

(Peach trees with the "curled leaf" can be cured by a dusting one or twice with wood ashes when the tree is wet.) Mr. Wm. McRae, of Lawrence, states that his pear trees were troubled with "Rose bugs," which were destroyed by burning tar under the trees.

We would advise our farmers and fruit growers, intending to set out pear trees *for profit*, to carefully ascertain what varieties are the most profitable in their immediate vicinity, on similar soil as their own, and not try, except for experiment, other varieties, until tested by themselves or their neighbors, as the same variety that does well in one place, is unprofitable in another, so that although a certain number of varieties are recommended by our Society for general culture, some of them do much better in that part where the soil is best adapted for them, which can only be ascertained by actual test, and if done thoroughly throughout the county, and the mode of culture of the trees, with the result attained, including the number and variety of trees planted and the varieties succeeding the best, communicated to our Society, would enable it not only to recommend a larger number of varieties, but also state the parts of the county best adapted to the successful culture of each variety.

All unite in stating the best time for picking fruit to be when the stem separates readily from the twig upon lifting the fruit. Change of color and the premature dropping of the fruit, *forced ripe* as it is commonly called, is another good indication. All kinds of pears should be picked off before ripening; many choice varieties are almost worthless, if allowed to ripen on the trees. Mr. Barry, when editor of the "Horticulturist," aptly stated: "The process of ripening on the tree, which is the natural one, seems to act upon the fruit for the benefit of the seed, as it tends to the formation of woody fibre and farina. When the fruit is removed from the tree at the very commencement of ripening, and placed in a still atmosphere, the natural process seems to be counteracted, and sugar and juice are elaborated instead of

fibre and farina. Thus, pears which become mealy and rot at the core, when left on the tree to ripen, become juicy, melting and delicious, when ripened in the house." Winter pears should not be picked until absolute danger from freezing approaches, they will then ripen up firm, with high color and finer flavor. All pears should be picked off, with the stem on, carefully, and handled as little as possible and very carefully afterwards, as every scratch will turn dark on mellow fruit, and every bruise will rot it. The practice of some, of rubbing fruit to make it shine, injures the keeping qualities of the fruit, destroys its natural look, and any exhibition committee should give the natural fruit the preference. Fruit with an *unnatural* shine on the *whole* in the plate, more properly belongs to the huckster's stand than the tables of an Agricultural Society's Exhibition.

To keep pears longest and best, they should be kept in a dark, cool, dry place, with temperature, if possible, at about 40 degrees, taking them to a warm, moderately moist place to ripen and soften them, an even temperature of 70 degrees is best. If laid between papers in Summer, and blankets in Winter, to ripen, they will come out with better flavor and color, ripening quicker and without wilting; fruit loses flavor if ripened in a place too cool.

The two large plates full of Clapp's Favorite pears and William's Favorite apples, exhibited by our Chairman, attracted attention, not so much for being handsome specimens of their kind, but for being "past their season," having been kept by wrapping each one in paper and packing them in a keg heavily lined with newspapers. The keg was then headed up and placed in a large ice-house near his premises until the day before the Fair. A neighbor of his wraps apples separately in papers, packs them in paper lined barrels, and then fills the barrels with dry sand, sending them to hot climates with success, as regards their keeping. A writer in the London *Garden* says that "he keeps fruit in this way all the year round. He has kept French Crab Ap-

ples two years. The Cattilac pear has remained sound twelve months. The fruit must be sound "when stored, and the sand must be quite dry."

"The chief advantages of packing in sand are the exclusion of air currents, the preservation from changes of temperature and the absorption of moisture, which favors decay. Much will depend on the apartment in which the experiment is tried; a dry, cool one being best."

Mr. Russell thinks that *he holds the key* to the solution of the problem of how to keep pears *longest* and *best*." He replies, "*Lock them up*." We believe that if the place where locked up, is *as cool* as his reply, there would be danger of *freezing*, which might not be the *best*.

The varieties recommended in the replies to the inquiry, What ten varieties recommended by you for profit? and why? are given below, in the order in which they received the highest number. For their special claims in rank you are referred to the replies appended, extracts from which, for the first ten varieties, are given here, viz. :—

1. Bartlett; bears early and abundantly, quality admirable, is a great favorite, always sells, ripens in September. 2. Sheldon, grows well, bears well, and sells at highest prices; ripens in October. 3. Louise Bonne de Jersey; good grower, very productive, finds a ready market; ripens in September. 4. Beurre d'Anjou; excellent, productive and profitable, excellent keeper; ripens from November to March. 5. Duchesse d'Angouleme; of the highest quality and most popular; ripens in November and December. 6. Seckel; of the highest flavor known among pears, productive, bringing a good price; ripens in October. 7. Beurre Clairgeau; early, abundant bearer, large and handsome, ready market at highest prices; ripens November to January. 8. Beurre Bosc; excellent and high flavored, much in demand; ripens in October. 9. Lawrence; free bearer of excellent winter pears, sells high; ripens November and December.

10. Vicar of Winkfield; great productiveness, ripens when others are nearly gone, finds a ready sale at good prices; ripens December to March. 11. Rostiezer. 12. Belle Lucrative. 13. Onondaga. 14. Clapp's Favorite. 15. Winter Nelis. 16. Howell. 17. Urbaniste. 18. Buffum. 19. Beurre Giffard. 20. Marie Louise. 21. Paradise d'Automne. 22. Glout Morceau. 23. Dearborn's Seedling. 24. Bloodgood. 25. Kingsessing. 26. Tyson.

Your Committee, like others, labored under the disadvantage of scattered fruit on the tables in the Exhibition Hall, while some of the fruit tables were intersected with manufactured goods, making it laborious, difficult and unsatisfactory for the Committees. The fruit was, however, better arranged than at most, if not all, of the previous exhibitions. The manner of quickly increasing the table space, *when necessary*, with a wide board upon supports, put on so readily (after the table was filled with fruit) in a way that did not interfere with showing the fruit under it, we considered a commendable expedient, worthy of notice and recommendation. The plates of pears being scattered among other classes of fruit, or with other varieties of the same class, *and where varieties were together*, the removal of plates back to the *collections* from whence taken, to enable the Committee to judge the collections, consumed so much time that some of the Committee were obliged to leave before completion; those that were left received the valuable assistance of Hon. J. J. H. Gregory and Aaron Low, Esq., for which the Committee here express their indebtedness.

The delay and labor of fruit committees, at all the Society's exhibitions, caused your Pear Committee to give the subject careful consideration, and they concluded that the Society was to blame more than Hall Superintendent, Exhibitors, or any Committee connected with the fruit exhibit, from the fact that the Society had not any special rules governing such exhibit, except the matter of entry and certify-

ing. That such special rules were necessary was so obvious that recommendations governing fruit exhibits, were presented at the Trustees' meeting in November, and unanimously adopted by the Society, so that collections and single plates would not be classed together, and to have each variety of each class together, so that their merits (as far as the eye reached them) could be contrasted quickly and surely by all. Exhibitors and Committees, by such rules, would know beforehand what was expected of them, the exhibitors would see, when they entered the hall, on what tables to place their fruit, by the prominent notice (name of class and variety) there displayed. It is expected, however, that the Hall and Fruit Committees will assist them all in their power. A copy of the Special Rules adopted by the Society, to govern Fruit Exhibits hereafter, is appended hereto.

Respectfully submitted for the Committee,

DAVID W. LOW, *Chairman.*

Special Rules to govern Fruit Exhibits, adopted by the Society, November 13, 1878.

All Fruit must be entered in the name of the *producer*, and each exhibitor must certify to the same on *lists of the varieties, to be filed when entry is made, or on the Entry Book.* (Committees are not authorized to make awards to those who do not comply with this rule.)

Tables will be labelled *in a conspicuous manner* by the Hall Committee, *previous to the entry of exhibitors*, with the names of fruit, or collections of fruit, for which premiums are offered, all others to be classed and labelled as *Miscellaneous.*

Exhibitors must place their several varieties where indicated by such labels, *or be considered by the Committees as not competing for premiums.*

Collections where premiums are offered for a number of varieties, must be entered and placed by themselves on the tables assigned *for collections of that class of fruit.*

Specimens of any variety, in such collections, *are not to compete* with specimens of same variety placed elsewhere.

No collection can be awarded more than one premium.

Exhibitors of collections *are not prevented from exhibiting additional specimens* of any variety *with*, and for competition with others of that variety.

Plates of 24 specimens of Fruit, when premiums are offered therefor, must be entered and placed by the Exhibitor on the table assigned for that class of fruit exhibit.

To entitle Exhibitors to receive the premiums and gratuities awarded, they are required to give information to the Committees (when requested) in regard to the culture of their fruit.

REPLY OF BALDWIN COOLIDGE, OF LAWRENCE, MASS.

I only exhibited Seckel this year, raised on a Standard tree. I should have shown Duchesse d'Angouleme, from a Dwarf tree, as I found on gathering them that I might have taken first premium over any shown. My place is quite small, a half acre only. The Seckel is ordinary nursery stock, the Duchesse is imported. My soil is a clayey loam, with a hard clay gravel-packed subsoil. The soil is enriched once in two or three years with night-soil, deposited in a series of holes dug around the trees, three or four holes to each tree, and from four to six feet from tree to nearest edge of hole.

I prune my trees a good deal, almost mutilate them, keeping them stocky and short, except when growing them for wood, and not fruiting. I prune usually in the spring, but sometimes in the fall; think fall the best on account of snows and storms having less of the tree to act on, the tree then knows just what to work on in the spring.

I have lost two trees by blight I suppose, the trees dry up and they die. I keep insects (red spiders) off with soap or potash, put bar soap in the crotches of the trees and let it

gradually waste away all summer. I found some left when picking this fall.

In regard to the most profitable pear trees to set out, that depends upon kinds, location, whether to eat or sell, &c. I have both Dwarf and Standard Duchesse, and the Standard is not to be compared with the Dwarf, but the Dwarf is from France, the Standard common. I pick my pears when the stem will break off in the right place, with a moderate degree of force, such as Seckel, Bartlett, Louise Bonne de Jersey, Clapp's Favorite, Belle Lucrative, Rostiezer and Tyson. The Duchesse I gather the first week in October, and they ripen from October to Christmas. I keep my pears cold, dark and dry.

I have not had the experience to recommend ten varieties for profit.

I get iron dust from machine shops and dig in around the trees as one would dig in guano, rub soap all over the trunk, keep the tree propped up. I think I lost one tree by its leaning over with fruit, three years in succession, (a Passe Colmar) ; it seemed to tear the small roots off.

Respectfully submitted,

BALDWIN COOLIDGE.

REPLY OF M. B. KENNEY, M. D., OF LAWRENCE.

I exhibited the following varieties of pears at the County Fair, at Lawrence, viz. :—Duchesse, from Dwarf tree, and Buffum, Flemish Beauty, and Vicar of Winkfield, from Standards, raised on a sandy loam, mixed, enriched once in two or three years with sink deposits, spread on surface. I prune off about *half* the previous year's growth in the spring.

My Vicars, Rostiezers and Buffums, have suffered *badly* with the blight. My other varieties have not been touched by it. A *radical cutting* is all that I have tried, and have *saved* some of them, although *much injured*, of course.

The most profitable trees to set out, I think, are Stand-

ards; we don't get the fruit so quick, but they have a *longer life*, and just as sure to bear a crop as the Dwarf.

I pick my pears as soon as they get their growth and begin to turn yellow. They ripen in from two to four weeks. I have never tried how to keep them best and longest.

I cannot recommend varieties for profit, as I do not consider myself a competent judge. I do not raise them for market. I go more for *quality* than quantity. I am aware that the Flemish Beauty has the reputation of cracking badly, but mine has never had but very few cracked, and that very seldom. They are of the finest quality, and the richest pear that I have in a variety of ten or twelve kinds.

M. B. Kenney, M. D.

Lawrence, Oct. 24, 1878.

In reply to inquiries for more particulars on certain points, Dr. Kenney kindly furnished the following:—

"When I set out the trees, about sixteen years ago, I had a hole dug about four feet in diameter and two and a half feet deep, then filled in about one foot of compost, bones, old shoes, lime, and old scraps of iron, then covered that with about six inches of soil, then set my trees and filled in with rich soil, such as is all around Lawrence and everywhere in these parts *the common soil*. I cannot tell its component parts, as I am not skilled in that science. The sub-soil is gravelly. All my trees *do* produce the same good quality, according to their kinds, as those exhibited. *I do not thin out* the fruit when young, but probably it would do better to do so on trees that start *very full* of young fruit. I have *no doubt* that *the fruit* would be *larger*. In *addition* to putting on the sink manure every two or three years, I also put on the ground over the *roots*, *not* very near the *body*, about a pint of *iron turnings or filings*, with about *half pint of salt* around each tree every four or five years. In regard to the protection from severe cold, my garden *is surrounded* on all sides, except the east, *by buildings*, which of course *does* protect them very much from the cold and winds, and very probably that helps much to produce good fruit.

This answers all your questions as near as I can; and if

there is anything else that I can say, that I have not, be assured that I will freely and gladly answer all, and give all the *particulars* that is possible for me. Although I am no *gardener* or *farmer*, I *do enjoy* spending my *few* leisure hours among my little fruit trees and vines.

Yours very truly,

M. B. KENNEY, M. D.

Lawrence, Nov. 4, 1878.

REPLY OF GEORGE W. RUSSELL, OF LAWRENCE.

I exhibited at County Fair, Sheldon pears, raised on soil of a clay nature, enriched once a year with stable manure. Have done very little pruning, and usually in the fall. Occasionally a tree dies from blight. Have tried no remedy.

The most profitable pear trees to set out, Dwarfs—because my experience is, that they yield more for space occupied. Children pick the pears as fast as they ripen, as long as they remain on the trees. To keep them best and longest—*Lock them up.*

REPLY OF H. B. ROBIE, OF LAWRENCE.

I exhibited at the County Fair the following varieties of pears, viz. :—Louise Bonne de Jersey and Lawrence, grown on Standard trees, and Duchesse d'Angouleme and Beurre d'Anjou, grown on Dwarfs. My soil is sandy loam with gravelly sub-soil, enriched every year with barn yard manure.

I prune very little. Have had two trees die this year with blight. Did not try any remedy. Do not know enough about them to say whether Dwarfs or Standards are best. I pick Louise Bonne in September, Duchesse and Beurre d'Anjou in October, and Lawrence in November. They are ripe for eating three or four weeks afterwards. I keep them best and longest in a dark, cool room, I cannot recommend varieties for profit, as I am acquainted with but few of them.

Respectfully,

H. B. ROBIE.

REPLY OF HENRY A. PRESCOTT, OF LAWRENCE.

I exhibited the following varieties of pears at the County Fair at Lawrence, viz.:—Duchesse d'Angouleme, Beurre d'Anjou, Winter Nelis and Louise Bonne de Jersey, raised on *Dwarf trees*, and Seekel, Sheldon, Beurre Clairgeau and Lawrence, raised on *Standard* trees, grown in a strong loam, with a hard, clay sub-soil, enriched lightly every year with stable manure, *well rotted*.

In pruning I head back severely every spring. Have been troubled very little with blight or insects. For blight, cut off, with generally good success. For insects, have done nothing.

I consider the most profitable pear trees to be, generally, Standards; some kinds do better on Dwarfs. I am not experienced enough to tell why.

I have not noted my times of picking fruit; my pears ripen in from four days to four weeks, keeping them longest and best by spreading them in a dark, cool place, and cover with woollen.

As my experience in raising pears has been rather limited, I do not feel competent to give further information.

HENRY A. PRESCOTT, Lawrence, Mass.

REPLY OF H. G. HERRICK, OF LAWRENCE.

I exhibited at the Fair the following varieties of pears, viz.:—Swan's Orange, or Onondaga, Louise Bonne de Jersey and Beurre Bosc, all grown on Standard trees, in garden loam, with clayey gravel sub-soil, enriched every year with *old manure*, with some of the mulching (coal ashes) dug in.

I prune, not much, except suckers, and enough to keep trees in symmetrical shape, in spring. I keep the branches open enough for sun to shine through them.

My trees have been troubled with blight heretofore—not much this year. For a remedy, tried knife and saw—heroic treatment. If done early enough the tree has been saved. If not, then not. I have had no experience with Dwarf trees. I pick my early fall pears when they have attained

full growth, and before they change color; they ripen in from one to three weeks, keeping them longest and best in a dark, dry, cool place, with plenty of air. Can not recommend the varieties of pears *for profit*, as I have had no experience in marketing pears. In enriching the soil for my trees, I dig in the manure around the trees every year—usually in the fall—and put a pile of coal ashes about the tree, say ten inches to a foot high at the trunk, running back two or three feet. It seems to be a protection to the roots, like mulching, giving the trees a better start in the spring.

Yours truly,

H. G. Herrick.

REPLY OF E. W. GREENE, OF NORTH ANDOVER.

I exhibited at the County Fair, at Lawrence, two kinds of pears, viz. :—Bartlett and Beurre Bosc, both varieties raised on Standard trees, grown in a heavy loam, with a hard-pan sub-soil, enriched yearly with light dressing of stable manure. I prune very little, in spring. Have been troubled with both blight and insects, to some extent; have tried no remedy. I pick my pears—Rostiezers when ripe, most of the others when the stem separates from the wood by lifting. They ripen in from one to four weeks, the earlier varieties quickest. I keep and ripen them best in a cool place, free from air. I recommend the following varieties for profit:—

Madeline and Rostiezer, early and productive. Bartlett, productive and universally known. Louise Bonne de Jersey and Seckel, productive and of good quality. Beurre Bosc, Beurre Clairgeau and Swan's Orange (Onondaga), all productive, and of good quality and fine appearance. Winter Nelis, productive and good keeping qualities. Buffum, hardy. I find the Bartlett, Swan's Orange, and Beurre Bosc, the most reliable to bear, and best for market with me.

Respectfully yours,

E. W. Greene.

North Andover, Oct. 31, 1878.

REPLY OF THERON JOHNSON, OF NORTH ANDOVER.

The different varieties of pears exhibited by me at the late County Fair at Lawrence, and the kinds of tree on which they were raised, were as follows:—Vicar of Winkfield, Sheldon, Howell, Buffum, Lawrence, Swan's Orange (Onondaga), Belle Lucrative, all from Standard trees, and Beurre d'Anjou, Seckel, Glout Morceau, from Dwarfs, Louise Bonne de Jersey, and I think the Seckel, were partly from Dwarf and partly from Standard.

Soil—dark heavy soil, underdrained, sub-soil clayey, enriched last year a little, but not before for five or six years, with barn-yard manure, about two shovelfuls to each tree, last fall; this spring it was spread over the orchard.

Have not pruned except to cut away dead wood. Have lost a number of trees by blight; have tried no remedy.

I think Standards the most profitable on our soil; cannot say why they are best, except that it is very difficult to make Dwarfs grow here; on lighter soils I think Dwarfs generally do better.

In picking and ripening pears, my usual rule is to let all kinds hang till by lifting the pear it readily parts from the tree. Vicars and late pears I let hang as long as safe. Different varieties vary in ripening from one to two weeks after picking, some longer. Have not tried many ways of keeping, but find that by placing them as soon as picked, on a shelf in a cool cellar, they kept better than any other way tried.

Cannot recommend any varieties for profit, as have never tried to sell any; but should say for early, Rostiezer and Dearborn's Seedling; second, Bartlett, Belle Lucrative, to be followed by Sheldon, Howell, Seckel, Swan's Orange, Glout Morceau, Vicar of Winkfield, and I believe the Winter Nelis is considered profitable with some, but I have not got that. I mentioned the above because all are good eating pears, most are good cooking, and with me are all good bearers and hardy. I believe some considered the Buffum a profitable

pear, it certainly bears well and is hardy, but I call it a very poor eating pear. The Kirtland, I have two trees, did not bear this year, and I shall graft it, for I think I never saw a worse pear. Beurre Clairgeau is a very nice pear, but a shy bearer with me. Lawrence also nice but shy. Flemish Beauty cracks badly.

JAMES T. JOHNSON,
For THERON JOHNSON.

REPLY OF JOHN O'BRIEN, OF BRADFORD.

I have exhibited at the County Fair, in Lawrence, the following varieties of pears, all raised on Standard trees:—Beurre d'Anjou, Sheldon, Onondaga, Seckel, Lawrence, Belle Lucrative and Beurre Clairgeau. My soil is a sort of dark brown loam, neither light nor heavy, from twelve to fifteen inches deep, with a sub-soil of very fine yellow, having as near the color of ground ginger as anything I can imagine, and I am satisfied that it is the soil for the apple, pear and grape. It is enriched every fall, as my pear orchard is my kitchen garden. I plough under a very liberal supply of barn-yard manure, excrement of horses and cows, which is the best fertilizer that I know of for all kinds of plants, (of course trees are plants, also), when properly applied to the soil, though wood ashes are excellent, but they are too scarce and too costly for profit. As to pruning, I am not very definite on this point, as I have been equally successful with pruning done soon after the fall of the leaf, and that done the 20th of March, on both pears and apples, though I think the most proper time to prune is during the dormant period, when there is no upward flow of sap. I believe pruning, systematically done, regulates the growth and welfare of the tree, and has a great tendency to induce the maturity of fruit spurs, thereby producing fruit earlier and of better quality, than if permitted to go unpruned, to say nothing of the uniformity of the tree. I am opposed to sawing off large limbs, as in so doing the tree receives a

severe shock, which must necessarily retard its growth, but if it must be done, the wound should be immediately covered with a mixture of cow manure and clay. This helps to heal the wound, and is a protection from the weather. To do away with this butchering entirely, permit no surplus wood to grow, or in other words pinch off all surplus young shoots when about five inches long, heading down, especially thrifty trees, by cutting off two-thirds of the last year's growth with a sharp knife, and make a smooth cut slanting upwards on a level with the point of the bud. In soft-wooded, pithy trees, half an inch ought to be left above the bud; the position of the bud cut to, is also of much importance in changing the form of the tree, that is, if you wish a shoot to grow upright, prune to a bud on the inside of shoot; and to spread, prune to a bud on the outside, for if you cut every year to a bud on the same side, in two or three seasons it will show an inclination to that side, a great injury to the symmetry of the tree. It is essential to head down once a year, in order that every limb should grow strong enough to stand up under its burden when it fruits.

Regarding blight—I had a very thrifty Standard Seckel tree in my orchard, which had about six inches of every branch on it blighted in the winter of 1871-72, and, singular to relate, it was not the last growth but the growth of the year previous that got blighted, while the growth above it, and all below it, remained sound, you could see at a distance a black line about six inches long. On discovering this, early in spring, I cut off with my shears every branch six inches below the blighted part, so as to stop its spreading any further, and now I am glad to say that the tree is thrifty and healthy, and last year I exhibited at the County Fair, at Lawrence, a dozen of its pears that I thought would bring the first premium.

The most profitable trees to set out, for permanency and profit, by all means Standards, because they grow larger, are more thrifty, live longer, and produce more fruit, the

Duchesse d'Angouleme alone excepted, which thrives best on quince stock. The Dwarf as a rule goes to bearing soon after planting, and bearing a few specimens every year, keeps it in a stunted and sickly state, and when a dozen years old, it is next to worthless, whereas the Standard, being as I may say a natural tree, goes to growing wood for future use, which is necessary before it ought to bear fruit for profit. We must not think that they are backward in bearing either, for we find our best varieties six years from planting (soon enough) well spurred for fruiting, with sufficient dimensions to bear two bushels of pears, and with me such varieties as the Bartlett, Belle Lucrative, and Beurre Clairgeau, have produced abundantly the fourth year from planting; but I would rather my trees grow wood than fruit, until they obtain sufficient size to hold up the fruit. In picking and ripening fruit, a good rule to follow when to pick pears is, on gently lifting the fruit the stem will separate from the limb, and the best place to keep them, is a dark, cool, dry room, with a good circulation of air. I pick Bartletts, Sept. 1st, ripe the 15th; Beurre Clairgeau, Oct. 1st, ripe Nov. 10th; Beurre Bosc, Oct. 1st, ripe the 20th; Duchesse d'Angouleme, Oct. 10th, ripe Nov. 10th; Louise Bonne de Jersey, Sept. 20th, ripe Oct. 5th; Sheldon, Sept. 25th, ripe Oct. 15th; Seckel, Sept. 25th, ripe Oct. 10th; Lawrence, Oct. 10th, ripe from Dec. 1st to Jan. 1st; Beurre d'Anjou, Oct. 10th, ripe Dec. 1st; Vicar of Winkfield, Oct. 10th, or as long as you can safely leave them to grow; they will keep in a good, dry cellar till March, and are fit to eat from December to that time; treat Winter Nelis the same as the Vicar. Another good pear, that I raise myself, I must not pass over, that is the Belle Lucrative, very productive, though a good pear it is not very salable in the market. You must bear in mind that the seasons and circumstances have a great deal to do with keeping fruit. I give you these dates as the proper time to pick, and when ripe in our climate, considering all things favorable to the fruit.

For the ten varieties for profit, I give you a list of the best varieties and most profitable in the whole catalogue of the pear family. There are other varieties worth raising, but without *much profit.*

Bartlett, bears early and abundantly, a great favorite, always sells, sold this year $2 to $2.50 per bushel.

Seckel, the highest flavored pear known, productive, and brings good price, sold for $2 to $2.50 per bushel.

Sheldon, a fine grower and a good bearer, sells for the highest price, sold for $2.50 to $3 per bushel.

Beurre Clairgeau, an early abundant bearer, a magnificent market fruit, large and handsome, sold mine this year for $3 per bushel.

Beurre Bosc, excellent and high flavored, ranks high with fruit dealers, sold for $3 this year per bushel.

Beurre d'Anjou, a fine pear, productive and profitable, no orchard is complete without it, sold for $2.50 to $3 per bushel.

Duchesse d'Angouleme, one of the best and most popular in the list, sold $2.50 to $3 per bushel.

Louise Bonne de Jersey, very productive, good grower, finds a ready market, sold for $2 to $2.50 per bushel.

Lawrence, an excellent bearer, one of the very best winter pears, sells high, selling for $2.50 to $3 per bushel.

Vicar of Winkfield, on account of its great productiveness, ripening when most all others are gone, it finds a ready sale at $2 to $3 per bushel.

It gives me great pleasure to answer your list of questions bearing on the cultivation of that most excellent fruit, the pear. I am never at home so much as in the midst of a thrifty bearing pear orchard, but to do anything like justice to the subject, would require more time and space. In answering your questions, however, I give you that which I have learned from practical experience, though not on a very large scale. I have a little orchard of 75 trees, all Standards, save some Duchesse. I grew the ten varieties I named in the list for profit. I can rely on them even when apples

fail; and when apples are a drug, as is the case this year, they sell for a fair price, and the demand for the fruit is constantly increasing year after year. The pear succeeds best on a rather heavy loam, the soil should be kept clean and mellow, and a broadcast cultivation, which they require during the growing season. If a hill of corn requires cultivation to accomplish its mission well, how much more so does a bearing tree. Trusting that my answers and remarks may be of some benefit to others,

I am very respectfully yours,

JOHN O'BRIEN.

REPLY OF WM. H. HUSE, OF NEWBURYPORT.

I exhibited the following varieties of pears at the County Fair, viz.:—Beurre Clairgeau, Lewis, Beurre Diel, Glout Morceau, Marie Louise, Beurre Bergamot, Louise Bonne de Jersey, Beurre d'Anjou, Lawrence, Beurre d'Amalis, Kingsessing, Buffum, Golden Beurre of Bilboa, Bartlett, Peerless, Vicar, Cross, Abbott, Sheldon, Curtland, Howell, Beurre Bosc, Beurre Langelier, and one *for a name*, all raised on Standard trees; Seckel, Urbaniste, Catillac, Duchesse d'Angouleme, Soldat Laboreux, Washington, Doyenne Boussouck, and one *for a name*, raised on Dwarf trees, grown on a rich loamy soil, with gravelly sub-soil, enriched every year with common barnyard manure.

I prune not much on old trees. Head them in young. My trees have been troubled with blight some. Have tried no remedy for it.

It depends upon circumstances what are the most profitable pear trees to set out. Should say Standards for most varieties, because they are longer lived.

I pick my pears when the stem parts from the twig easily, and keep them best and longest in the coolest place where they will not freeze.

I recommend for profit the following varieties of pears, viz.:—Seckel, Lawrence, Bartlett, Beurre d'Anjou, Louise

Bonne de Jersey, Kingsessing, Sheldon, Beurre Clairgeau, Duchesse d'Angouleme, Urbaniste. Because they are all good quality, steady bearers, and bring a high price.

Respectfully yours,

WILLIAM H. HUSE.

Newburyport, Nov. 13, 1878.

REPLY OF JOHN PRESTON, OF GEORGETOWN.

I exhibited at the County Fair, at Lawrence, the following varieties of pears :—Beurre d'Anjou, Onondaga, and a variety without name, all grown on Dwarf trees.

My soil is a very dark rich loam a foot or more in depth, with sub-soil of a yellowish rich loam a foot or more in depth, resting on a stratum of extremely fine white sand, or sand and clay intermixed, the sand very largely predominating. This stratum of sand is so compact as to form a hard pan.

I enrich the soil around my trees yearly, usually in the spring of the year, with "Stockbridge's Fertilizer for Fruit Trees," and "Bradley's Superphosphate of Lime." I prune only enough to give the trees perfect form. I usually cut back the leaders about the last part of August, or late enough in the season to prevent a succulent growth. By this method of pruning, the sap is impeded in its circulation, and the result is a larger growth of fruit spurs and buds.

My trees have been troubled with the blight and insects, to some extent. If some part of the tree is diseased, I immediately remove that part from the tree; if the tree is diseased generally, I immediately cut it down and commit it to the flames.

Some three or four year since my pear trees were infested with pear slugs, but by several applications of air slacked lime to the foliage of the trees, when moist with dew or rain, destroyed most of them. No other insect has done me much damage.

For the most profitable trees to set out, should say Standards on most soils, and Dwarfs on some soils, because Stand-

ards will grow and thrive on most soils in Essex County. Dwarfs require a very deep and rich soil, and high cultivation, to make them thrive well, with more attention on the part of the cultivator.

As regards picking, ripening and keeping, I usually gather early summer and early fall varieties from one to two weeks before maturity, late fall and winter varieties the last of September or first of October; the early kinds ripening from one to five weeks after picking, according to variety. The late fall and winter varieties I can give no definite time. I keep them in small, tight boxes placed in the coolest part of my room or cellar.

Ten varieties recommended for profit, are;—Clapp's Favorite, Bartlett, Louise Bonne de Jersey, Buffum, Sheldon, Onondaga, Urbaniste, Beurre d'Anjou, Duchesse d'Angouleme, and Vicar of Winkfield, because that of some thirty or more varieties that I cultivate, the ten above named varieties grow more pears on the same number of trees, are salable in the market, and command, usually, remunerative prices.

I am just recovering from a fever, and am so feeble that I can hardly write a legible hand, or give much information in regard to pear culture, &c.

Respectfully yours,

JOHN PRESTON.

Georgetown, Oct. 27, 1878.

REPLY OF JOHN W. MARSHALL, OF ROCKPORT.

I exhibited, at the County Fair, Sheldon pears and Beurre d'Anjou, grown on Standard trees, in what was a swamp, having been filled in with a foot of loamy gravel; the soil under the swamp foundation is clay. The soil is enriched every year with barn manure and compost, a good liberal dressing. I have a pen in which house offal, leaves, &c., are put, with an occasional throwing on of soil, to prevent its becoming offensive, making with my small family and garden about a cord and a half of very rich compost.

I prune any time. When I see a limb growing out of shape I clip it, without regard to the season of the year. My trees have been troubled with fire blight; several trees have been killed and others injured. I always have noticed that the fastest growing trees are the ones most affected. The blight was noticed in mid-summer by the limbs and leaves turning black, just as if fire had struck them. I cut off the parts affected.

I believe that Standards are generally the most profitable pear trees to set out, with exception of the Duchesse, Louise Bonne, Vicar, and perhaps some others, which do better I think on Dwarf trees—bearing better fruit. Standards with room enough will last longer and be the most profitable for most varieties.

I recommend for profit the Bartlett, Louise Bonne de Jersey, Sheldon, Beurre d'Anjou, Duchesse d'Angouleme, Belle Lucrative, Vicar of Winkfield, and Lawrence, because they are well known in the market.

Very respectfully yours,

JOHN W. MARSHALL.

REPLY OF PETER WAITE, OF DANVERS.

I exhibited 34 varieties, but I will name only a few of them; of course all the common varieties, such as Bartlett, Belle Lucrative, Louise Bonne de Jersey, Paradise d'Autome, Beurre Bosc, Marie Louise, Beurre Clairgeau, Beurre d'Anjou, Howell, Sheldon, and others. I also had some new varieties, which I think should have more notice, and their culture encouraged by premiums instead of some of the worthless kinds now on the list, such as the Buffum, Rostiezer and Doyenne d'Ete, which are not worthy of cultivation. I would recommend in their place the Pratt, Doyenne de Comice and Beurre Hardy. Of this last variety I had a dish of 25 specimens, which I think no dish of pears in the Show excelled. I did not exhibit so many varieties because of their excellence, but to show the contrast between the poor and

the good, so that people could see and select for themselves such as are worthy of culture.

My soil is a *heavy gravelly loam*, with a *sub-soil of clay and hard gravel*, enriched generally, once a year, with quite a variety of manure, sometimes one kind, and then another. A compost of barn manure, hog and night soil, makes a good stimulant. The offal from the tan yard is good.

I prune considerable. I think a *small amount of good fruit is better than much poor*. Spring and summer I like best for small-pruning, and the fall for large limbs. Some kinds need much pruning, while others need but little. It needs good judgment and practical experience, and should be attended to.

My trees have been troubled considerably with the blight; my remedy for it is *amputate immediately*, as you would your leg or arm, if *they* were affected with gangrene, and you must be careful to get below all the affected part, for the poison runs down in the sap and destroys as far as it goes. My success, when the work is done in season, is complete, but neglect is fatal.

For the most profitable pear trees to set out, Standards are the only kind I would set, unless Dwarfs are set deep enough to root from the pear stock. The Dwarf makes only a small tree, the roots not being sufficient to support it; then it is short lived, and affords but little fruit.

When to pick pears is altogether governed by circumstances, but most pears should not ripen on the trees. By giving attention, with very little experience, a mere novice might know when to pick his pears, which will ripen, some in three days, others weeks. I keep them best and longest in a dark cool place. I find for late pears no better place than a cool cellar. Light and heat ripen them up quickly. Some seasons some kinds will not ripen up good. This is peculiar to the Vicar, and in consequence some think it not worth raising; but it is an excellent pear, and often will keep till spring, but it must be grown large.

The ten varieties I should recommend for profit are the Bartlett, Marie Louise, Paradise d'Automne, Beurre Bosc, Beurre Clairgeau, Beurre d'Anjou, Howell, Sheldon, Pratt, Beurre Hardy, and Louise Bonne de Jersey. The Bartlett is the best early pear, and fills up quite a space between other early and later kinds. The Louise Bonne comes soon after, and is a fine pear for the table and for shipping (?). The other kinds are all late Fall or early Winter. There are many other varieties of late pears that stand high, such as the Duchesse, the Vicar, Dana's Hovey, Lawrence, Merriam, &c.; also Pratt, Beurre Hardy, and Doyenne de Comice.

It has become a fact that almost every one that has a foot of land must have a pear tree on it, and those that have more land must have more trees accordingly. Hence *almost every one has two trees where they ought to have but one.* I know of some fine pear orchards that have double the trees they should have on the same ground, and by this method of setting trees, is made a great loss in the outset, two dollars for one, and then you can't get so good fruit, and there are other disadvantages by being so much crowded.

Respectfully yours,

PETER WAITE.

REPLY OF BENJAMIN P. WARE, OF MARBLEHEAD.

In reply to your questions of what pears I raise, and their culture, &c., I think we generally grow too many varieties of pears for profit. For Summer, I approve of Beurre Giffard, Clapp's Favorite, Golden Beurre. Fall: Bartlett, Seckel, Beurre Bosc, Sheldon, Beurre Clairgeau, Duchesse d'Angouleme. Winter: Beurre d'Anjou, Lawrence, Vicar of Winkfield. I grow many other varieties, but not of sufficient value to recommend for general culture. The above are all standard trees.

My soil is a strong kind, not subject to drought, with a subsoil of gravelly loam, some clay. The soil is enriched with a compost of barn manure and sea kelp, for five or six

years in succession, then rest in grass for three or four years. My trees are pruned a little annually in the spring; avoid cutting large limbs, by cutting out, while small, such as will interfere, when grown, with others.

My trees have been troubled by fire blight, so called, and more, I think, when manured the most; also somewhat by slugs in August. I know of no remedy for the blight. When attacked by it, the tree usually dies in about three years. I have tried cutting off the diseased branches, but with little success. The slugs may be destroyed by dust of any kind.

I think Standards the most profitable to set out for orchard culture, and Dwarfs for amateurs, or small gardens. Standards will produce larger results, and are more easily cultivated.

Summer and Fall pears should be picked when they begin to drop, which is before they are ripe; Winter pears about the middle of October. Summer pears ripen in about a week, and Fall pears in about two weeks after picking.

Pears should be picked carefully into boxes or barrels and placed in a cool, dry, (*i. e.*) not damp cellar, not allowing them to wilt by being too dry, and as near 35 or 40 degrees as possible.

For profit, only well known Standard varieties should be grown. The Beurre Giffard is good size and quality for an early variety; bears well. Clapp's Favorite comes next in ripening, is very showy, good quality, and productive. Bartlett is perhaps the most profitable of any, comes in bearing young, very productive and popular, large and showy, quality that almost every one admires. Seckel, best quality, prolific, sells well, very small unless thoroughly thinned out. Beurre Bosc is large and beautiful, sells well, but comes late into bearing; does well on gravelly sub-soil. Sheldon, very beautiful and fine, sells well. Beurre Clairgeau is a great bearer, commences young, very large and beautiful, but not of first quality; sells well. Duchesse d'Angouleme is lar-

gest size, fair quality, good bearer, sells well, does best on Dwarf stocks. Beurre d'Anjou is probably the best of all, bears well, keeps all winter under good conditions, or may be brought out in December, is large and very fine. Lawrence is excellent, aromatic, productive, keeps well, and is valuable. All pears should be thinned for the best results.

I am very happy to have received your circular, and have endeavored to briefly answer your inquiries.

Very respectfully yours,

BENJAMIN P. WARE.

REPLY OF T. C. THURLOW, OF WEST NEWBURY.

I raise the following varieties of pears, viz. :—On Standard trees—Bartlett, Sheldon, Lawrence, Buffum, Doyenne Boussouck, Clapp's Favorite, Onondaga, Seckel, Howell, and Abbott. On Standard and Dwarf trees—Beurre d'Anjou, Urbaniste, Rostiezer, Doyenne d'Ete, Belle Lucrative, and Vicar of Winkfield.

My soil, most of it, is strong clayey loam, part is *good* sandy or gravelly loam, but the first is best, the sub-soil is gravel, with a little clay. The soil is enriched once in three years, on an average. We would like to enrich every year, on the surface in the fall, with any kind of manure. I prefer to prune a little every year, in summer, say in June, though *early* in spring is a very good season. We have sometimes seen a very little of the blight, but not often; we have cut away and destroyed any diseased tree, or branch of a tree. The "Slug" sometimes troubles young trees. These can be easily destroyed by dusting them with a little dry ashes, or air slacked lime. No other insect troubles our pear trees to any extent. For the most profitable pear trees to set out, I should generally prefer Standards, and should recommend them to my customers, because they are hardy, and will last longer, under ordinary cultivation. The Dwarf pear, especially on the quince, is very liable to be killed in the root, and is short lived generally. I pick the summer

and fall varieties one or two weeks before they are ripe. The winter varieties we leave on the trees as long as possible, or till there is danger of freezing. It depends upon the weather and circumstances, how long after picking they are ripe enough for eating. We keep them best and longest in a cool, dry place, in thin layers. Winter pears should be barreled up and put in a cool, dry cellar.

The ten varieties recommended for profit by me, are, Bartlett, Lawrence, Beurre d'Anjou, Sheldon, Belle Lucrative, Beurre Bosc, Duchesse, Louise Bonne de Jersey, Bloodgood, and Seckel, in the order named, because these are the most hardy, productive, and popular in the market.

I think if you should recommend to the Society in your report, some changes in the *arranging* of the fruit, so that all the *varieties* may be put together, it would be an excellent plan.

Very respectfully,

T. C. Thurlow.

REPLY OF AARON LOW, OF ESSEX.

I have raised the following varieties of pears, viz. :—Bartlett, Sheldon, Buffum, Louise Bonne de Jersey, Stephens's Genessee, Beurre Diel, Beurre d'Anjou, and Lawrence, on Standard trees; and Buffum, Duchesse d'Angouleme, Louise Bonne de Jersey, Vicar of Winkfield, and Winter Nelis, on Dwarf trees.

The soil on which they were grown was rather heavy loam, with a clay sub-soil, enriched *yearly* around small trees, and *every other year* around larger trees, with stable manure, ashes, and bone dust.

I prune lightly every spring; have not been troubled with blight or insects.

The most profitable pear trees to set out are Standards for most kinds: Dwarf for the Duchesse and Vicars.

I pick my fruit when they will part freely from the tree.

Different kinds of pears vary in ripening; some are ripe in a week or two after picking, others will keep a number of months, keeping best and longest when kept *as cool as possible.*

The ten varieties recommended by me for profit are Bartlett, Sheldon, Louise Bonne de Jersey, Belle Lucrative, Buffum, Beurre d'Anjou, Beurre Bosc, Duchesse d'Angouleme, Lawrence, and Vicar of Winkfield.

Pear trees should not be manured very heavily, for the reason if they make too large a growth they are more apt to winter-kill, as the wood does not get hardened up and ripe enough to withstand severe cold.

Bartletts, Louise Bonne de Jersey, Buffum and Vicar, do better if the fruit is *thinned out when small*, as these varieties are very apt to overbear.

The above are brief answers to your questions, which, if of any benefit to pear raisers, I shall be well paid for writing them.

Yours truly,

AARON LOW.

REPLY OF J. HENRY HILL, OF AMESBURY.

(Received after Report had been sent in.)

I exhibited the following varieties of pears at the County Fair, at Lawrence, viz.:—Sheldon, Belle Lucrative, Lawrence, Dana's Hovey, Swan's Orange (or Onondaga), Stevens's Genessee, Mount Vernon, and Winter Nelis, *all raised on Standard trees*, and Louise Bonne de Jersey, Urbaniste, Doyenne Boussouck, Beurre Diel, Duchesse d'Angouleme, Andrews, Beurre Bosc (double worked), Buffum, Beurre d'Anjou, Glout Morceau, Seckel, Beurre Langelier, Bartlett, Beurre Clairgeau, Vicar of Winkfield, and Nouveau Poiteau, *all raised on Dwarf trees.* The soil is a gravelly and clay loam, with a sub-soil from a coarse gravel to a hard clay, enriched annually with stable manure and ashes. I have never used any commercial fertilizers on my trees, but consider

flour of bone and German salts good for all varieties of fruit.

I give my trees an annual pruning, using *a sharp knife.* I do not let any limbs get large that should be removed, but do it when small, and then it will make no difference when they are cut. If the tree has been neglected until the limbs that should have been removed grow large, I would advise cutting them either in November or June. My trees have been free from blight and insects.

The most profitable tree to set out depends on the nature of soil, amount of land to be planted, and number of varieties wanted. For heavy clay loam, I should plant Dwarfs. For light, gravelly or sandy soil, plant Standards by all means; because Standards in the garden would require too much garden room and give too few varieties, while Dwarfs, properly planted, (two inches below the union,) can be set closer, giving a larger number of varieties and quicker returns.

When, by taking hold of the pear, it will readily separate from the stock, then I consider is the proper time to pick the pears. It depends on the temperature of the weather whether warm and dry, or cool and moist, how long after picking they will be ripe enough for eating.

I keep them best in my cellar, which is cool and dry, keeping them in shallow boxes, closely covered. I put a half-inch of hard wood saw-dust in the bottom of the box, laying the pears in very carefully to the depth of four to six inches, then cover with paper, placing a mat or blanket over the paper to keep all close.

The ten varieties of pears I would recommend for profit are Doyenne d' Ete, Beurre Giffard, Bartlett, Seckel, Sheldon, Swan's Orange, and Lawrence, on Standards. Louise Bonne de Jersey on Dwarfs, and Rostiezer, Beurre d'Anjou and Mount Vernon on Standards or Dwarfs; because the above varieties do well in almost all localities.

A person who is about setting pear trees, should be very particular in selecting the same,—never setting poor trees, as

they are dear at any price. Procure your trees of some responsible nursery-man, and if possible go and select the trees yourself and see them properly dug and packed. Having your ground thoroughly prepared, all mutilated roots should be smoothly cut, and you should see to it that the trees are properly set and the soil well packed about the roots. Then set a stake and secure your tree properly to it. Have the tops thinned out and cut back two-thirds of last year's growth, and then give good clean cultivation and an annual trimming and dressing.

J. Henry Hill.

Thinking that the recommendations of Hon. Marshall P. Wilder, President of the American Pomological Society, a gentleman who, although four score of years has passed over his head, has not wearied in imparting information in the direction which has been a specialty with him for many years, I addressed him a request, if not trespassing upon his valuable time, to give, for the benefit of our County Society, a list of the ten varieties of pears which, from his mature experience in pear culture, he considered the best for profitable culture, which elicited the following reply, too late to be forwarded with the Report of the Committee, but will make a *valuable annex*, and is submitted for that purpose.

D. W. Low, *Chairman.*

REPLY OF HON. MARSHALL P. WILDER.

Boston, Dec. 2, 1878.

Dear Sir:—The following list of pears comprises an excellent collection. They are all healthy trees, and the fruit is good, either for the table or market, in their season. Clapp's Favorite, Bartlett, Doyenne Boussouck, Paradise d'Automne, Merriam, Sheldon, Beurre Bosc, Lawrence, Beurre d'Anjou, Vicar of Winkfield, for baking, fine specimens are also good for dessert.

Clapp's Favorite, the best early large pear, should be gathered by 20th of August.

Doyenne Boussouck, splendid healthy tree, very produc-

tive, and salable in market. Half the crop should be gathered by the 25th of August, and ripened in the house, the remainder when the fruit comes to size, thus the tree is kept in bearing every year.

Merriam, one of the most profitable for market, on account of its fine golden russet color, which it assumes after it is picked.

Beurre d'Anjou, the best and most profitable, very late fall and winter variety, covering the months of November and December, and with care may be kept to February, popular throughout the United States, the most valuable pear that I have introduced in forty years.

The other varieties are too well known to need qualifications.

MARSHALL P. WILDER.

APPLES.

Your Committee have the pleasure to report that the quantity and quality of the entries in this department far exceeded those of previous years.

The superior quality of apples gathered from our own orchard, we attribute, in part, to the absence of the Codlin Moth, which has done much injury to the crops of other years; we did not find any in the traps and bandages that readily capture them if any appear. We believe one cause of the large proportion of cider apples in our orchards is that more fruit is allowed to remain on the tree than can mature; this may be prevented by judiciously thinning the small fruit, or what is better, the blossoms, before the fruit sets, and if, as some claim, this will give us a crop the next year, a double advantage will be gained.

550 plates were exhibited. The following premiums and gratuities were awarded:—

$3 each, first premiums for best dish of twelve specimens of the following varieties, viz.: To E. B. George, Groveland, Baldwin; John Titcomb, Groveland, Hubbardston; Thomas A. Sides, Groveland, R. I. Greening; S. B. George, Grove-

land, Porter; John P. Foster, North Andover, Roxbury Russet; S. B. George, Groveland, Hunt Russet; T. K. Leach, Topsfield, D. W. Sweet; S. M. Titcomb, West Newbury, Drap d'Or; Peter Wait, Danvers, Pickman Pippin; Charles Perley, Boxford, Sweet Baldwin; D. W. Low, Gloucester, William's Favorite; Mrs. John Taylor, Amesbury, Gravenstein; J. Henry Hill, Amesbury, Haskell's Sweet. Premium for the best twenty varieties, $8, J. H. Hill, Amesbury; for best fifteen varieties, David W. Low, Gloucester, $6; for best ten varieties, Charles C. Blunt, Andover, $4; for best twenty-four specimens of apples, W. W. Perkins, Newbury, $6.

Gratuities of $1.50 each, to Peter Wait, Danvers, Minister Apple; E. B. George, Groveland, Northern Spy; E. F. Webster, Haverhill, New York Greening; Mrs. A. R. Warren, Lawrence, Pound Sweeting; Joseph Pratt, Lawrence, Maiden's Blush; Charles Perley, Boxford, President; W. J. Brown, Bradford, Crimson Bough; Z. C. Wardwell, Groveland, Summer Queen; B. F. Huntington, Amesbury, Ladies' Sweet; B. F. Huntington, Amesbury, Alexander; E. B. George, Groveland, Russet Sweet; S. M. Titcomb, West Newbury, Garden Royal; John C. Webster, Methuen, Blue Pearmain; Z. C. Wardwell, Groveland, Crab; Z. C. Wardwell, Groveland, Wagner.

Best assortment of Crab Apples, J. H. Hill, Amesbury, premium, $5; H. N. Chubb, Lawrence, Crab Apples.

Gratuities of $1 each to the following: Virgil Dow, Methuen, Porter; John P. Foster, North Andover, Sweet natural fruit; T. O. Wardwell, North Andover, Sweet natural fruit; E. G. Hardy, North Andover, King Apple; John Barry, Andover, Twenty Ounce; J. M. Jones, Groveland, Hubbardston; J. Henry Hill, Amesbury, Rhode Island Greening; H. A. Prescott, Lawrence, Hubbardston; S. F. Newman, Newbury, R. Russet; F. P. Putnam, Danvers, Hunt Russet; A. H. Gould, Topsfield, Danvers Winter Sweet; E. Woodfull, Lowell, E. Spitzenburg; Peter Wait,

Danvers, Twenty Ounce Pippin; Frank Goodson, North Andover, Gravenstein; M. S. Jenkins, North Andover, R. Russet; Z. C. Wardwell, Groveland, Crab; Horace Ware, Marblehead, Baldwin; Geo. W. Chadwick, Boxford, R. Russet; George A. Rea, North Andover, Fall Harvey; John Barry, Andover, Porter; Morris Murphy, North Andover, Gravenstein.

G. W. Gage, *For the Committee.*

PEACHES, GRAPES AND ASSORTED FRUITS.

The Committee on the above named articles respectfully report that they were much disappointed in the exhibition of peaches, the specimens presented being inferior to what might have been expected in a season more favorable than most years to this fruit. No specimens of any white fleshed peach, or of any Essex County Seedling, were shown, which the Committee thought worthy of the premium. The latter failure they particularly regret, as they deem the production of new varieties of this fruit, of superior quality, and hardy and *healthy* in the tree, a most desirable object Even if such varieties are not sufficiently distinct to be worthy of propagation, the growers will be fully rewarded by the possession of trees which will probably produce more abundantly and give more satisfaction than grafted trees. But great care should be taken to plant seed only from trees showing no sign of disease. A large proportion of the peaches which have come under the eye of the writer the present season, have, in their premature ripening, pimply and spotted surface, and stained flesh, shown marks of the yellows—a fatal disease. We repeat, therefore, that the utmost care should be taken to propagate, whether by seeds or buds, only from perfectly healthy trees.

The season has not been favorable for grapes, and here at the northern limit of grape culture, we cannot in such a sea-

son, expect a satisfactory exhibition of this fruit. Even the Concords were not up to the standard of that variety. The Committee regret that they were unable to award the premium for the best collection, only one lot containing the requisite number of varieties having been presented, and this not coming up in other points to the requirements of the offer. The Committee, however, think the exhibitor of this collection entitled to great credit for the pains taken to display it, and as they believe much instruction may be derived from such a collection, they have given it the largest gratuity awarded, and as they deem it desirable to add to the number of early varieties, adapted to this latitude, they would especially mention one variety, the Warden, of which good specimens were contained in this collection, as early, and as giving promise of value in other respects. Another variety of similar promise (though not exhibited on this occasion) is the Moore's Early, which the Committee recommend for trial.

Your Committee would take the liberty to remind exhibitors of the importance of showing the exact number of specimens—*no more* and no less—mentioned in the offer of the premium. If, for instance, a dish of grapes entered for premium contains more than four bunches, the comparison is made only with the best four, and all others are simply in the way of the Committee. But it should be understood that this remark applies only to fruits offered for premium, and that a dish presented for exhibition only may contain as many specimens as the exhibitor may choose.

Three baskets of assorted fruit were presented, containing a variety of handsome specimens and well arranged. All were so good that the Committee had much difficulty in deciding between them. If they may be allowed a word of criticism, they would say that, in their judgment, the colored and scalloped paper placed around one of them was hardly in better taste than the "bouquet papers" with which bouquets

are ornamented (?) by New York florists, but which are happily seldom seen here. A covering of green moss or trailing wintergreen would have been much more appropriate. Another basket was decorated with a row of pears around the outside, which were made to hang down by breaking the stems partly through—a violence which the Committee could not approve, and which, if unavoidable, should have been in some way concealed.

Your Committee regret to find themselves unable to speak in higher terms of commendation of the fruits submitted to their examination by those who have contributed of the best which their gardens afforded. They are aware that this inability is largely caused by an unfavorable season and not by any less of care or skill on the part of cultivators than usual. Though the skill of the gardener is most forcibly shown in counteracting the effects of unfavorable seasons, it cannot wholly overcome them. In what the Committee have said, they have been actuated only by a desire for improvement, which cannot be promoted by indiscriminate praise. But it is much pleasanter to praise than to point out defects, and your Committee trust that another year may bring a more genial season and afford the Committee appointed to pass upon these products an opportunity to congratulate the Society and the exhibitors upon a fuller exhibition and better specimens, more carefully displayed, than ever before.

The following premiums and gratuities are awarded :—

W. P. Bailey, West Newbury, best Yellow Flesh Peach, $2.

Premiums of $3 each for the following varieties of Grapes : H. H. Wright, Lawrence, Concord ; H. H. Wright, Lawrence, Hartford Prolific ; Mrs. D. H. Stickney, Groveland, Isabella ; R. Goodwin, Haverhill, Delaware ; S. J. Richards, Lawrence, Iona ; L. Bradley, Methuen, Clinton ; R. Goodwin, Haverhill, Diana ; Peter Wait, Danvers, Israella ; B. D. Beadle, Lawrence, Wilder (Rogers) ; E. Grimes, Methuen, Merrimac (Rogers 19) ; J. Henry Hill, Amesbury, Rogers

22. Theron Johnson, North Andover, for Cold House Grapes, second premium, $4. George W. Gage, Methuen, best basket of Assorted Fruit, $4; Peter Wait, Danvers, second best basket of Assorted Fruit, $3.

Gratuities are awarded as follows: H. B. Currier, Newburyport, Peaches, $1; I. H. Boardman, Newburyport, Crawford's Early, 50 cents; R. H. Call, Lawrence, Grapes, $1; G. W. Gage, Methuen, Concord Grapes, $1.50; G. W. Gage, Methuen, collection, $3; James Lawrie, Danvers, Delaware, $1.50; Z. C. Wardwell, Groveland, Delaware, 50 cents; L. K. Pemberton, Groveland, Hartford, $1; George Lightfoot, Lawrence, Concord, $1; H. H. Hall, Lawrence, Concord, 50 cents; Michael Madden, Lawrence, Diana, 50 cents; Peter Smith, North Andover, Black Hamburg, $2; H. B. Robie, Lawrence, Black Hamburg, $2; Mrs. G. R. Waterman, Lawrence, Syrian, $1; Peter Wait, Danvers, Orange Quinces, $2; Coolidge, Lawrence, Orange Quinces, 50 cents; H. A. Hale, Lawrence, Orange Quinces, 50 cents.

Robert Manning, Josiah Newhall, Jos. W. Ropes, W. H. B. Currier—*Committee.*

FLOWERS.

The following premiums and gratuities are awarded:—

T. D. Halley, best pair Parlor Bouquets, $3; T. D. Halley, best pair Hand Bouquets, $2; J. C. Craig, Lawrence, best Floral Design, $2; Emma H. Gage, Methuen, best Cut Flowers, $2. Mrs. Hill, Amesbury, best twelve Dahlias, $1; best twelve Gladiolus, $1; best twelve Petunias, $1; best display Pansies, $1; best twelve Phlox, $1. T. D. Halley, Lawrence, best twelve Verbenas, $1; M. E. Fuller, Middleton, Native Flowers, $1; Edward Flynn, Lawrence, best general display, $4.

Gratuities of $1 each were awarded to: Mrs. Weston, Danvers, Parlor Bouquets; J. G. Craig, Lawrence, Parlor Bou-

quets; N. E. Ladd, Groveland, Floral Design; Industrial School, Lawrence, Floral Design; Annie M. Greene, North Andover, Floral Design; T. D. Halley, Lawrence, Cut Flowers; Mrs. Waterman, Andover, fine display; T. D. Halley, Lawrence, fine display; Mrs. E. F. Childs, Lawrence, Winter Basket; Mrs. F. Symonds, North Andover, German Ivy; T. C. Thurlow, West Newbury, Evergreens; Mrs. T. F. Tuttle, Lawrence, 19 varieties Cactus.

Gratuities of 50 cents each were awarded to: M. J. Wilson, Methuen, Parlor Bouquets; E. W. Hatch, Haverhill, Parlor Bouquets; Emily Carlton, North Andover, Parlor Bouquets; Mrs. John Hoyt, Georgetown, Parlor Bouquets; J. G. Craig, Lawrence, Hand Bouquets; Mrs. Waterman, Andover, Hand Bouquets; S. M. Titcomb, West Newbury, Floral Design; M. J. Wilson, Methuen, Floral Design; Mrs. S. H. Harris, Methuen, Cut Flowers; Mrs. G. W. Chandler, Lawrence, Cut Flowers; Peter Smith, Andover, Dahlias; Jackson Webster, Haverhill, Dahlias; Nettie Buckell, Dahlias; Addie Page, Groveland, Petunias; Emily Gage, Methuen, Petunias; Nettie S. Webster, Haverhill, Pansies; Herman Juenger, Lawrence, Pansies; J. G. Craig, Lawrence, Pansies; Nettie S. Webster, Haverhill, Phlox; J. G. Craig, Lawrence, Phlox; Peter Smith, Andover, Verbenas; J. G. Craig, Lawrence, Verbenas; Emily Carleton, North Andover, Native Flowers; J. G. Craig, Lawrence, Heliotrope; Alice Moore, Caladium; Alice Clark, Lawrence, Caladium; Mrs. H. M. Porter, Lawrence, Squills; Mrs. Waterman, Andover, Dracena; Mrs. Dr. Kenny, Lawrence, Century Plant; Geo. E. Morris, not entered, Fernery; Mrs. Keniston, Methuen, Fig Tree; Edward Flynn, Lawrence, Coleci; J. H. Reynolds, Lawrence, Geranium; E. F. Webster, Haverhill, Rustic Stand; Mrs. Wm. Russell, Lawrence, Palms; Hattie Green, Andover, Basket Everlastings; C. A. Lyons, Lawrence, English Ivy.

Gratuities of 25 cents each awarded to: Herman Juenger Lawrence, Datura; Peter Smith, Andover, Heliotrope; Mrs.

M. E. Fuller, Middleton, Dried Bouquets; Nettie Webster, Haverhill, Pinks; Ed. Flynn, Lawrence, Tritonia; Lucy Chubb, Lawrence, Balloon Plant; Mrs. Jane Sweet, Lawrence, Irish Shamrock; E. J. Farwell, Lawrence, Cactus; Edith Nason, West Boxford, Fernery; E. Webster, Haverhill, Coxcombs; T. H. Kelley, North Andover, Princess Feather; Lydia Griffin, Lawrence, Cactus; Lizzie Maine, Lawrence, Or. Pine; C. M. Godkin, Haverhill, Bouquet; Mrs. F. Symonds, North Andover, Geranium; —— Coanes, not entered, Cactus; Sarah J. Williams, Lawrence, Jerusalem Cherry.

The display in this department was much finer and more extensive than that of last year. Many of the contributions showing much artistic taste were passed by the Committee with a small gratuity, owing to the large number of contributions and the small amount of money allowed, $50 being the appropriation.

The Committee desire to offer the following suggestions: As this department is one of the most attractive features of the Show, it seems to them desirable that a larger amount of money should be appropriated to it. It may not be necessary to increase the premium in amount, but there should be money enough to give something to a larger number of the contributors than can be done with the amount now allowed.

Your Committee also think first and second premiums should be allowed for bouquets, as it was so difficult in many instances to decide between bouquets of nearly equal beauty. It also seemed to them the premiums for native flowers are much too small, when we consider the great amount of labor involved in making such a collection.

Separate premiums, we think, should be awarded for green-house bouquets and those of garden culture. It is impossible for flowers grown in home gardens to compete with those grown in the green-house.

Your Committee would also suggest that the premiums for

Dahlias be stricken from the list. So many other flowers, more beautiful and popular, have taken their place in modern garden culture, and whatever premiums are given should be awarded to more desirable varieties of flowers.

Your Committee found their duty one of considerable difficulty and labor, and desire to return their thanks to Mr. Edward Flynn, for his valuable assistance.

The exhibition made by A. H. Dunlap & Son deserves honorable mention, although under the rules no premium could be awarded them. Their exhibit of Asters, Larkspurs, Snapdragons, etc., was especially fine.

For the Committee,

MRS. JOSEPH S. HOWE, *Chairman.*

VEGETABLES.

The Committee report premiums and gratuities as follows:

Premiums of $3 each to Levi Emery, Lawrence, Early B. Beet; M. F. Batchelder, Peabody, Short Horn Carrot; Charles R. Anderson, North Andover, Long Orange Carrot; T. O. Wardwell, North Andover, Mangold Carrot; H. A. Styles, Middleton, Purpletop Turnip; Byron Chadwick, Boxford, Yellow R. Baga; M. F. Batchelder, Peabody, Parsnips; R. Goodwin, Haverhill, Danvers Onion; Granville Bradley, North Andover, E. R. Potatoes; Moses B. Abbott, Andover, Savoy Cabbage; B. P. Ware, Marblehead, Fotler's Drumhead; Herman Phelps, Andover, Stone Mason; M. F. Batchelder, Peabody, Red Cabbage; Moses B. Abbott, Andover, Cauliflower; J. W. Bailey, Bradford, Field Corn; Levi Emery, Lawrence, Sweet Corn; J. G. Craig, Lawrence, Pop Corn; Levi Emery, Lawrence, Marrow Squash; David Warren, Marblehead, Turban Squash; David Warren, Marblehead, Marblehead Squash; Byron Chadwick, Boxford, Tomatoes; Aaron Low, Essex, Red Flat Tomatoes; Aaron Low,

Essex, Spherical Tomatoes. Scott & Veitor, Lawrence, best collection Garden Seeds, $8.

A second premium of $2 each to M. F. Batchelder, Peabody, Savoy Cabbage; Moses B. Abbott, Andover, Brunswick Cabbage; M. F. Batchelder, Peabody, Brunswick Cabbage; C. R. Anderson, North Andover, Red Cabbage; C. R. Anderson, Andover, Cauliflower; Edward Rostron, Lawrence, Celery; J. G. Chadwick, North Andover, Water Melon, first premium; M. F. Batchelder, Peabody, Hubbard Squash.

Gratuities of $2 each to Aaron Low, Essex, greatest variety; Industrial School, Lawrence, Vegetables; E. G. Nason, West Newbury, Wheat Seed; E. G. Hide, Danvers, Vegetables; E. F. Webster, Haverhill, variety Seeds.

$1 each to M. F. Batchelder, Peabody, Long B. Beet; George R. Bradley, Methuen, White Ruta Baga; R. T. Jaques, West Newbury, Danvers Onion; R. S. Bray, West Newbury, Danvers Onion; M. F. Batchelder, Peabody, Yellow Flat Onion; Andrew Lackey, Haverhill, Burbank Onion; George W. Chandler, Boxford, Brownell's Beauty Onion; Frederick Symonds, North Andover, Potatoes; S. Longfellow, Groveland, Trace Corn; David Warren, Marblehead, Hubbard Squash; D. W. Low, Gloucester, Cape Ann Squash; M. F. Batchelder, Peabody, Canteloupe Melon; Eben Grimes, Methuen, Citron Melon; C. M. Abbott, Andover, Watermelon; A. M. Robinson, Andover, Tomatoes; Chas. S. Clark, Lynnfield, Cranberries; Virgil Dow, Methuen, variety Vegetables; S. R. Bodwell, Andover, Corn; Willis Lassiter, Andover, Sweet Potatoes; Herman Phelps, Andover, Sweet Potatoes; Nathan C. Abbott, Andover, Crookneck Squash; M. F. Batchelder, Peabody, Crookneck Squash; E. Tennant, Lawrence, Onions; Moses B. Abbott, North Andover, Lima Beans; Charles R. Anderson, North Andover, Endive; M. F. Batchelder, Peabody, Herbs; J. B. Knight, Newbury, Vegetables.

50 cents each to F. Kimball, Lawrence, Vegetables; Theron Johnson, North Andover, Celery; Daton Kilham, Box-

ford, Gourd; Nellie S. Stevens, Lawrence, Marrow Squash; Bernard Young, variety Vegetables; D. M. Nolan, Haverhill, Corn; C. F. Waitt, Danvers, Egg Gourd; G. W. Green, North Andover, Golden Millet; Theron Johnson, North Andover, Kohl; J. K. Chadwick, North Andover, Peppers; Henry Nice, Lawrence, Japanese Beans; S. M. Davis, Lawrence, Gourd Beans; G. S. Phippen, Methuen, Turnips; Aleck Burk, Peabody, Cauliflowers; J. G. Downing, Andover, Mangolds; John Lonergan, Lawrence, Beans.

COUNTERPANES AND RUGS.

WROUGHT COUNTERPANES.

1st premium, $4, to Mrs. A. C. Buckley, Danvers; 2d premium, $2, to Mrs. J. S. Arnold, Methuen. Gratuity of $1 to Mrs. A. J. Henry, West Boxford; Mrs. Harris, Lawrence; Mrs. Jane Williams, Lawrence; Mrs. Lydia Southwick, Lawrence. Gratuity of 50 cents to Mrs. S. W. Kendrick, Lawrence; Mary Curran, Haverhill; Abigail Boardman, North Andover; Mrs. Julia Seaver, Lawrence.

WROUGHT HEARTH RUGS.

1st premium, $3, to Mrs. Thos. D. Davis, Beverly. 2d premium, $2, to Mrs. John W. Frederick, Methuen. Gratuity, of $1 to J. Balch, Groveland; Mrs. D. R. Parker, Groveland. Gratuity of 50 cents to Mrs. B. F. Gorham, Lawrence; Mrs. Mary W. Leach, Methuen; Mrs. R. Wheelock, Lawrence.

F. E. Clark, H. A. Learoyd, Mrs. H. H. Proctor, Mrs. W. L. Bowdoin, Andrew Nichols—*Committee.*

LEATHER AND ARTICLES MANUFACTURED THEREFROM.

Your Committee on Articles Manufactured from Leather and Rubber award the following gratuities:—

To I. O. Nash, Lawrence, one light single Harness, gratui-

ty, $3. To E. A. Putnam, of Beverly, one heavy single Harness, $3. P. B. Robinson, of Lawrence, a very fine display of hand-made Boots and Shoes, and also a variety of Rubber foot wear, gratuity, $5.

Aaron Sawyer, I. H. Putnam, David Stiles.—*Committee.*

MANUFACTURES AND GENERAL MERCHANDISE.

J. A. Fogg, Lawrence, Brass Founders, $3; J. V. Carr, North Andover, Horse Shoes, $2; A. S. Bunker, Lawrence, Pea Sheller, Tobacco Cutter, Strawberry Huller, Raspberry Picker, and Paper Tunnels, $3; J. W. Bolton, Rockport, Tree Protector, $2; C. T. Morrison, Lawrence, Fret Sawing, $3; J. W. Marshall, Rockport, Railroad Gauge, $1; S. S. Hickock, Methuen, useful inventions for invalids, and other purposes, as Right and Left Bed Pans, Car Starter, Grape Shears, Boot Jack, and Stocking Puller, $3; John Stafford, Lawrence, Brushes, $3; Mrs. M. L. Caverly, Lawrence, Bonnets, $3; Mrs. A. W. Belcher, Lawrence, Bonnets, $2; Misses S. and M. Kay, Lawrence, Bonnets, $1.

Wm. D. Lamb, Charles Ingalls, E. G. Berry.—*Committee.*

FANCY WORK AND WORKS OF ART.

The committee make awards as follows:—

Gratuity of $3 to Mrs. Wilbur Jordan, Lawrence, Affghan. Gratuities of $2 each to Mrs. S. Henry Wilson, Lawrence, Embroidery; Mrs. A. P. Newhall, Lynn, Ink Marking; Miss Mary Coffin, Lynn, Ink Marking; Mrs. S. M. Beach, Lawrence, Knitted Cover; John Gill, Lawrence, Embroidery; Mina Kelley, Pillow Lace; M. J. Eastman, Lawrence, Lace Work; Chester Chubb, Lawrence, Agr. Wreath; Eliza Trask, Danvers, Pillow Shams.

Gratuities of $1 each to M. I. Tucker, Lawrence, Worsted Work; Lizzie Huse, Lawrence, Lace Work; Mrs. S. M. Colby, Lawrence, Lace Work; Lillie Hammond, Andover,

Crochet Work; Mary Furbush, Lawrence, Embroidery; Mrs. C. M. Arthur, Lawrence, Embroidery; Mrs. Augusta Gage, Lawrence, Embroidery; Miss B. M. Gilbert, Haverhill, Embroidery; Lucy A. Chubb, Lawrence, Hair Chairs; Mrs. R. Flanders, Lawrence, Preserved Flowers; Mrs. S. Webster, Methuen, Hair Work; Mrs. Edgar E. Mann, Lawrence, Worsted; Mary T. Conway, Worsted Pictures; Hattie L. Green, Lawrence, Immortelles; Mrs. L. Chase, Haverhill, Embroidery; Mrs. Carlton Grimes, Lawrence, Embroidery; Mrs. Margaret Longley, Haverhill, Knitted Shawl; Emily F. Carlton, North Andover, Tatting; C. W. Mann, Lawrence, Drawing; Georgie E. Briggs, Lawrence, Shams, &c.; Mrs. O. F. Churchill, Lawrence, Shawls; L. A. Cummings, Andover, Embroidery; M. L. A. G. Saunders, Lawrence, Embroidery; Mrs. E. G. Woodward, Haverhill, Mrs. J. H. Kendall, Lawrence, Mr. E. C. Colby, Lawrence, W. H. Barker, Methuen, Mrs. E. Palmer, Lawrence, Mrs. Olivia S. Holmes, Lawrence, each Work of Art.

Gratuities of 50 cents each to Mary Flavel, Lawrence, Tidy; Clara Lang, Lawrence, Tidy; Chas. Runlett, Haverhill, Silk Box; Emma I. Smith, Lawrence, Worsted Work; E. R. Merrill, Lawrence, Wax Work; N. M. Clark, Lawrence, Fancy Basket; M. A. Wood, Lawrence, Mottoes; Mrs. Dorcas Osgood, North Andover, Embroidery; Laura Ames, Lawrence, Worsted Work; Lottie Upton, Lawrence, Worsted Work; Abby Kelsey, Lawrence, Feather Flowers; Etta McGibbon, Lawrence, Feather Flowers; Mrs. E. C. Colby, Lawrence, Miss Lizzie Woodford, Lawrence, Mrs. Christopher Howe, Methuen, Miss Daisy Blanchard, Methuen, S. T. Woodbury, Lawrence, Miss Lizzie Currier, Lawrence, John W. M. Smith, Lawrence, Miss S. C. Lane, Lawrence, each Work of Art. Honorable mention is made of the works by the following persons: Mrs. A. P. Clark, Mrs. G. W. Russell, Baldwin Coolidge, John H. Gilman, Willis H. Plummer.

For the Committee,

Mrs. A. P. Clark.

CHILDREN'S WORK.

Work by children under twelve years of age—Alice A. Hale, Georgetown, 5 years, Quilt, first premium, $3.00; Gracie M. Spofford, Georgetown, 9 years, Stockings, second premium, $2.00; Gertrude G. Chadwick, West Boxford, 11 years, Braided Mat, third premium, $2.00.

The following gratuities were awarded :—Freddie H. Clark, Lawrence, 9 years, Painted Tiles, $2.00; Eddie Morgan, Lawrence, 11 years, Mottos, $1.00; Emma Burnley, Lawrence, 12 years, Mottoes, $1.00; Minnie M. Holt, Lawrence, 11 years, Match Safe, $1.00; Ethel M. Emerson, Lawrence, 7 years, Picture Frame, $1.00; Maud V. Rodinizer, Lawrence, 12 years, Lace Work, $1.00; Lillian Colby, Lawrence, 5 years, Scrap Bag, $1.00.

Mrs. J. S. Shattuck and others, *Committee.*

FARMS.

The only Farm entered was that of Mr. Samuel Dane, of Hamilton. Three members of the Committee have visited this farm during the season; two of them at haying time, and one of them later.

Mr. Dane's farm and farming lands comprise about sixty acres in all, somewhat over thirty of them making the homestead. When Mr. Dane purchased his place, the land was to a large extent a waste, but poorly fenced, and the buildings in very poor repair. The improvements have been in clearing the land of trees and bushes, the underdraining and reclaiming of most of the land in tillage; erecting a substantial stone fence, over four feet in height, around most of the premises, enlarging and materially improving the farm-house, the erection of various outbuildings, and the building of a large and elegant centennial barn.

The farm has but few fruit trees, and the quantity of stock kept on the premises has varied from two to four cows and

from two to four horses. The Committee found everything about the barn arrangement very judiciously planned, and everything about the farm in good order.

The Committee have hesitated about the propriety of recommending the premium to a farm so much below the average in the quantity of the stock and orcharding; but on reflection, considering that this deficiency is more than made up by unusually large portion of reclaimed land, they would recommend that a premium of thirty dollars be awarded by the Trustees. The Committee noted with great pleasure the magnificent elms, bordering the main road, which Mr. Dane has preserved with a care most praiseworthy, and they consider that they come fairly into the class of facts which make up the best conducted and most improved farm within a wise interpretation of the premium.

For the Committee,

J. J. H. Gregory.

GRAIN CROPS.

The Committee on Grain Crops report seven entries, classed as follows, viz. :—Four of Rye, by Messrs. Rolfe and Knight of Newbury, Bailey of West Newbury, and Dane of Hamilton. Corn, two entries, by Abel S. Harriman of Groveland, and John Pearl of Boxford. Wheat, one entry by Nathaniel Little, Jr. of Newbury. Your Committee have met five times to view the same and make their awards, which are as follows :—

Rye, first premium, $10, to J. B. Knight of Newbury, whose statement, together with that of Mr. Dane, is annexed.

Mr. Rolfe's crop did not come within the rules of the Society, as it contained only one-half acre. But your Committee would feel that an injustice had been done Mr. Rolfe if honorable mention were not made of the crop, which they hereby do. Had it contained the full acre, Mr. Rolfe would

undoubtedly have received the premium. Mr. Dane's crop was good, but the heads were not well filled, the straw was heavy—some of it measuring 6 feet, and 8 inches in length. His crop would have been much larger had it not been for the severe drought. Mr. Bailey's crop looked well, but he failed to put in a statement.

Wheat, first premium, $10, to Nathaniel Little, Jr., of Newbury. Mr. Little had an excellent crop, and we refer to his statement, where full particulars will be found.

Corn, first premium, $10, to John Pearl, of Boxford.

We recommend a gratuity of $6 to Abel S. Harriman, of Groveland. Mr. Harriman's corn was planted in drills, and showed the effects of good cultivation, as does everything about his farm. Mr. Pearl's crop was a little larger than Mr. Harriman's, and filled out better. When everything is taken into consideration, the crop is wonderful. Planted June 11th, on a wet and very stony piece of pasture land that had never before been ploughed, and scantily manured at that, the crop of eighty-seven bushels of dry shelled corn on one acre is remarkable. Had the season been wet, instead of dry, your Committee are of the opinion that Mr. Pearl would not have raised a sound ear of corn on the whole acre.

In our trips about the county we noted, with no small amount of satisfaction, the large increase in the average of grain, for it seemed to denote that returning to the "dollar of our daddies," also brings us back to the good old ways of "our daddies." The hue and cry of old fogyism in our style of farming, lasted too long, and we hail with joy the fast approaching time when every farmer "shall produce that which he consumes."

In the cultivation of grain we are not only producing, as a country, what we consume, but we are, to a greater extent than many are aware, feeding the people of other countries. The importance and magnitude of our grain crop cannot be over-estimated. The last monthly report of the Department of Agriculture estimates this year's wheat crop at 400,000,000

bushels, the corn crop at 1,300,000,000 bushels, and an oat crop in excess even of the very large product of last year. The estimate of the wheat crop, two months ago, was 407,000,000 bushels, or 87,000,000 bushels more than the yield of 1877.

During the last six years we have more than doubled, nearly trebled, our exports of corn, wheat and flour, sending abroad last year no less than 85,000,000 bushels of corn, 4,000,000 barrels of flour, and about 100,000,000 bushels of wheat.

Are not these statistics well calculated to make the American farmer proud of his vocation and prouder still of his country?

Horace F. Longfellow, Hanson Ordway, Charles Perley, Sidney F. Newman—*Committee on Grain Crops.*

Byfield, Nov. 9, 1878.

STATEMENT OF J. B. KNIGHT.

Statement to the Essex Agricultural Society of a crop of Rye raised by J. B. Knight, of Newbury, 1878.

The crop of 1876 was potatoes; twenty loads, 30 bushels per load, of barn-yard manure, was put on and ploughed in. The crop of 1877 was oats, with ten loads of manure per acre ploughed in, valued at four dollars per cord. The soil is a gravelly loam, with a gravelly sub-soil. The oats were cut before they headed, and when again grown were ploughed in six inches deep, and once harrowed, the middle of September. Cost of ploughing, three dollars per acre.

Rye mixed with an equal quantity of wood ashes, and moistened, was sown, two bushels of seed per acre; value of Rye one dollar per bushel. It was harrowed twice after sowing, at a cost of one dollar per acre for sowing and harrowing. It was harvested by reaping the first of August, at a cost of four dollars per acre for reaping and binding. Cost of threshing by hand, five dollars per acre; amount of straw, one and three-fourths tons.

Remarks.—In consequence of the quantity of seed sown the straw was quite thick on the ground, as your Committee saw at the time of their visit, but it did not lodge, and it was pretty well filled out, although it was somewhat pinched by the dry weather coming a little too soon for it to fill plumply.

J. B. Knight.

By this I certify that I measured one acre of Rye ground for James B. Knight, of Newbury, in August, 1878.

N. Little, Jr.

I hereby certify that I measured the Rye grown on the above mentioned acre of ground—44 12-56 bushels.

Paul A. Perkins.

STATEMENT OF SAMUEL DANE.

The acre of Rye which I enter for premium, was cradled and threshed in August; of which I had 31 1-2 bushels of nice Rye; the weight of the straw was 3,650 pounds. The land where raised was light and loamy, nearly worn out land. It was ploughed last year and planted with potatoes, manured in drills, with about three and a half cords of barnyard manure and meadow-muck compost, from which I raised a good crop of potatoes.

Ploughed again in September and about two cords of the above compost harrowed in, and sowed down to rye and grass seed.

EXPENSE OF RYE CROP.

Dr.

To 2 cords manure, at $7,	$14 00
Ploughing and harrowing	3 50
Seed, sowing, &c.	2 00
Cradling, storing, &c.	3 50
Threshing	2 50
Total	$25 50

Cr.

By 31 1-2 bushels Rye at 90 cents	$28 35
3,650 pounds straw (at barn) at $15 00	27.37
Total	$55 72
	$25 50
Net proceeds, or profit	$30 22

I have straw taken from the ground by the Committee, that measures 6 feet 8 inches long.

SAMUEL DANE.

Hamilton, July, 1878.

STATEMENT OF JOHN PEARL.

Statement concerning a crop of corn raised by John Pearl, in town of Boxford, year 1878.

The land used for the crop, previous to 1877, had never been in cultivation, but was a low piece of pasture land, covered with wild grass and bushes. In the fall of 1877 it was ploughed eight inches deep. In the spring of 1878 harrowed with wheel harrow. Soil dark, with a clay bottom. Planted June 11th, 3 feet 8 inches apart each way, with 5 quarts 8 rowed yellow corn.

Cost of ploughing, harrowing and planting	$11 70
" " cultivating and hoeing once	3 00
" " 3 cords stable manure in hill	24 00
" " 5 quarts of corn for seed	20
" " harvesting	10 00
Amount of fodder estimated at 4 tons	24 00

" " crop 87 1-7 bushels.

JOHN PEARL.

STATEMENT OF N. LITTLE, JR.

The land has produced a crop of onions for two years previous, that is in 1876 and 1877, and received for dressing

about twenty loads of barn-yard manure each year. Soil, a rich, black loam, on a clay sub-soil.

The method of treatment for the present year was simply once ploughing about six inches deep, and harrowing twice before sowing, then sowed one bushel and three pecks of seed, and harrowed twice alternately cross-wise; sowed grass seed, and lastly rolled the ground once with a heavy ox-roller. No manure whatever used.

Result.—The yield on one hundred and seventy-five rods of land was 2522 pounds of wheat, or forty-five bushels and two pounds; of fifty-six pounds to the bushel. (The kernel was badly pinched, supposed by the severe drought in July.) Three tons of straw, thirty-seven hundred weighed, the balance estimated.

Dr.

To ploughing	$ 3 00
harvesting	1 00
seed and application	5 00
harvesting and threshing	10 00
Total	$19 00

Cr.

By forty-five bushels wheat at $1.50	$67 50
three tons straw at $12.00	36 00
Total	$103 50
	$19 00
Profit	$ 84 50

Respectfully submitted,

N. Little, Jr.

Newbury, Nov, 5, 1878.

This certifies that the above measurement of grain is correct.

N. W. Moody.

This certifies that the above measurement of land is correct.

SIDNEY F. NEWMAN.

ROOT CROPS.

There were but three entries made with the Committee this year. One of Early Rose Potatoes, by Mr. J. B. Knight, of Newbury, one of Onions, by Mr. G. A. Randall, of Newbury, and one of Cabbages, by Mr. J. J. H. Gregory, of Marblehead.

The Committee visited the several crops entered, and although there was not any competition, we considered each and all worthy of the first premium.

The statements of the method of cultivation, amount of the several crops, and the cost of producing the same, are hereunto annexed, and the Committee award as follows :—

To Mr. J. B. Knight, of Newbury, for his crop of Early Rose Potatoes, the first premium of $10.

To Mr. G. A. Randall, of Newbury, for his crop of Danvers Onions, the first premium of $10.

To Mr. J. J. H. Gregory, of Marblehead, for his crop of Cabbages, the first premium of $10.

Aaron Low, James P. King, Albert Titcomb, John Price —*Committee.*

STATEMENT OF J. B. KNIGHT.

Statement concerning the crop of Early Rose Potatoes entered for premium : The crop of 1876 and 1877 was grass, no dressing applied ; the soil is a rather heavy loam. For the crop of 1878 the ground was ploughed in the Fall of 1877 seven inches deep, at the cost of four dollars per acre. About eight cords per acre of barnyard manure was hauled on the ground in the Spring of 1878, at an estimated value of four dollars per cord, and cut in with the wheel harrow.

Planted with Potatoes the first and second week in May,

using the small or medium size, taken from the pile put in, in the Fall, for market; about twelve or fourteen bushels per acre, at an estimated cost of twelve dollars per acre, for seed and planting. They were planted in rows three feet apart, and three feet between hills. The cultivator was passed between the rows before the potatoes came up; after they came up they were cultivated and hoed twice, at a cost of six dollars per acre. They were harvested the latter part of September, at a cost of eight dollars per acre.

Remarks.—A part of this piece was planted with one potato, of small or medium size, in a hill, and a part with a large potato, cut in two, with one piece to a hill. Where the whole potato was planted, the appearance for the first part of the season was much more forward than where the piece was planted, and I think that a good start in the Spring has much to do with the crop late in the season, and the harvesting of this crop goes far to confirm this opinion.

Respectfully submitted,

J. B. Knight.

This certifies that I have measured a piece of ground on which the above crop was grown, and there were ninety-four rods in said piece.

N. Little, Jr.

I hereby certify that I measured the potatoes grown on the before-mentioned piece of land, and there were one hundred sixty-four and one-half bushels, of sixty lbs. to the bushel, of merchantable potatoes.

Jeremiah Mahoney.

STATEMENT OF G. A. RANDALL.

Statement of G. A. Randall, concerning a crop of Onions raised in 1878, in the town of Newbury.

The crop raised upon this land the past three years has been Onions. The ground was ploughed in the fall of 1877 and manured with compost manure, about one part fish and

four parts cow and horse manure, which was spread on top after ploughing, at the rate of about eight cords to the acre, and laid until spring, and was then ploughed in, the land harrowed, brushed, raked, and sowed at the rate of four pounds of seed to the acre. Land rather light loam. The crop was hoed six or seven times with a wheel hoe, and weeded three times.

This half acre was surveyed by J. N. Rolfe, and is a part of a six acre bed, and I think four acres of it produced nearly as many Onions per acre, as the half acre which I enter for premium. The crop was harvested about September 10th, two loads were weighed by Daniel Lunt, the others were loaded as near as possible, in the same carts, making 307 bushels on the half acre.

Cost of ploughing and harrowing	$ 4 00
" " raking and sowing	3 00
" " hoeing and weeding	20 00
" " harvesting	8 00
" " manure	24 00
" " seed	3 00

The crop has been sold at $2.10 per barrel, including barrel. The above statement is correct, to the best of my knowledge.

G. A. Randall.

STATEMENT OF J. J. H. GREGORY.

The crop of Cabbages entered for premium are the Early Brunswick, commonly known as the Fotler Cabbage. They were raised in Middleton, on "Bear Hill" Farm. The piece was of about two acres. It was planted from June 16th to 20th. Owing to the drought, nearly half of the piece had to be set with plants taken from the portion first planted, which, having the advantage of a shower just after the seed was put in the ground, came up very uniformly. More or less of transplanting was done up to the latter part of July, but the growing season being unusually prolonged, about every plant

on the piece made heads of good size and hard. Towards the close of the season, a few hundred were started to prevent the heads from bursting, but I have noticed that on what might be termed country farms, as distinguished from those on the sea-board, cabbages are far less likely to burst their heads, which I attribute to the fact that the ground is not so filled with manure, not having been so long in tillage, nor so highly manured by the annual dressing of the soil. This fact is of value to the farmer, as he can safely plant his late Cabbage earlier in the season, and get as large and as hard heads, as on the seaboard, with less manure; the extra length of season for their growth being an equivalent. In saying this, I would not be understood to state that large and hard heads can be got without liberal manuring, but simply that as the bursting of the heads being an end to all profitable growth, and they are more apt to do this, and at an earlier day on the rich lands of the sea coast, the country farmer can count on this extra season for growing as an equivalent for a proportion of the manure that his seaboard brother is compelled to use.

The land had for the two previous years been devoted to the growing of Onion seed, and had consequently received liberal manuring, though of the varieties and quantities applied I have no record. The soil being very moist, and having many large boulders, weighing from a few hundred pounds up to several tons, scattered over the surface, last spring I had it tile-drained and cleared of stone. In June I applied a compost, composed in part of fish waste and soil, and in part of glue waste and soil, about one part fish waste to four parts soil, and one part glue waste to two parts soil, six cords to the acre. This was ploughed in. After harrowing and furrowing out, I had applied to each hill—the rows were three feet apart and the hills nearly three feet—one-third of a shovelful of a compost made up of one part bone dust, well decayed, two parts Riverside super-phosphate, ten parts ashes, and twelve parts of the fish and glue compost. The

cost to me of the fish and glue compost was about three dollars a cord; that of the compost used in the hills very nearly two-thirds of a cent for each hill, the materials entering into it having been purchased wholesale.

The soil was strong loam, about seven inches deep, with a sub-soil of admixture of sand and clay. In preparing the land it was ploughed but once, about seven inches deep. The cost of ploughing, harrowing and furrowing, I should estimate per acre, at eight dollars. The quantity of seed was half a pound to the acre, at a cost of two dollars. The cost of planting the seed I should put at two dollars per acre. The crop was cultivated and hoed three times, at a cost of thirty dollars per acre. The thinning and transplanting I put at five dollars per acre. As the Cabbages were for seed purposes, the cost of harvesting could hardly be estimated. As to the value of the crop, at the time it was gathered seed Cabbages were worth about eight cents each in Boston market.

James J. H. Gregory.

NEW VARIETY OF WINTER APPLES.

On the latter part of the second day of the Fair, the attention of the Chairman of your Committee was called, by Mr. James W. Bailey, of Bradford, to a plate of apples (Ropes apple, so called) which he represented to be a new kind of fruit, for which he asks for the $100 premium.

The premium is large, and I think ought not to be paid until the apples are fully tested and proved to be of superior quality, and it will take years to prove the bearing qualities of the tree, and the keeping qualities of the fruit. I therefore thought it unnecessary to call on the other members of the Committee, as no premium would be awarded this year. Such measures can be taken hereafter as may be thought proper.

Joseph How, *Chairman.*

Methuen, Nov. 13, 1878.

INDIAN CORN.

At the meeting of the Trustees, in November, it was voted to refer to a Special Committee, the whole subject of the premiums offered to the Farmers' Club making the best exhibit at the Fair, at Lawrence, with written statements of the culture, varieties of corn, and products, that would show what variety is capable of the largest product per acre; to be submitted to the Committee on or before Nov. 1. The Committee thus appointed have carefully examined all the statements that have since been presented from members of the North Andover Farmers' Club, viz.:—Albert Berry, John P. Foster, J. D. W. French, Frederick Symonds, E. G. Green, Charles S. Foster, Charles F Bisbee, and also the report of the Committee of the West Newbury Farmers' Club, which is annexed.

It is quite apparent to the Committee that the object for which the premium was offered, has been entirely overlooked by the applicants, as in no instance can any one form an opinion from the statements made, what variety of corn will give the greatest yield, as no comparison has been made between the most popular varieties. As the conditions on which the premiums were offered, have not been complied with, nor the information sought obtained, the Committee do not feel authorized to award the premiums.

Within the last three years the corn crop has been receiving in Essex County more of the attention that its importance demands, than for many years previous. It is believed by the Committee that a difference in the quantity of product of from twenty to fifty per cent. may be obtained from the quality and variety of seed planted, thereby making it a very desirable and profitable crop, or one of disappointing results. Therefore your Committee feel the great importance of ascertaining by careful experiment, what variety will produce the largest profit, and it is hoped that the premiums offered may induce the necessary care to develop the desired information.

The Committee would suggest for the guidance of future applicants, that the only way to obtain satisfactory evidence, is to plant several varieties of corn that are well known to be productive, on land of similar quality and location, with the same fertilizer and cultivation, and carefully note the results by weight.

Benjamin P. Ware, Charles P. Preston—*Committee.*

REPORT OF THE WEST NEWBURY FARMERS' CLUB.

The Corn offered to the Essex Agricultural Society by the Farmers' Club of West Newbury, was raised by ten or twelve members of that Club, and the manner of cultivation was somewhat different, but in most cases it was raised with barn-yard manure spread broadcast, about six cords per acre.

With this manner of cultivation the amount per acre has averaged 65 bushels of shelled corn, two of them had 85 bushels per acre. We do not know what it cost to raise a bushel of corn with barn-yard manure, inasmuch as we do not know the amount of fertilizer remaining in the soil after the crop is off. Three of our members have tried the Stockbridge fertilizer with the following result, with the presumption that the Corn took from the soil the amount of fertilizer applied. Their statement is as follows. Planted according to the Stockbridge formula, the cost per bushel has been 43 cents; the amount per acre 47 bushels of shelled Corn.

The Corn crop of this town is all of 15 bushels less per acre than last year, owing to the severe drought in July.

Our seed is the Danforth Corn, eight rowed, and, everything taken into consideration, the best variety we have ever planted. We tried the Hapgood Corn this summer, with very poor results.

I have an early variety; the seed I brought from Maine last spring; it was on exhibition at our Fair, also at the Essex

Fair, in Lawrence. It is three weeks earlier than the Danforth. For light soil, everything considered, I think it the best kind for general cultivation.

E. G. Nason, *For the Committee.*

TREADWELL FARM.

The Committee on the Treadwell Farm, respectfully submit the following report :—

The farm still continues under the lease to Hon. Thomas P. Pierce, and under the management of Mr. Philbrook, who devotes a large part of the tillage land of the farm, to the raising of vegetables for the market, corn and roots for feeding to his large stock of milch cows and breeding horses. The farm buildings are now in excellent repair; the land is carefully cultivated, kept clean of weeds, and may be considered as a good example of a well managed farm, that no member of the Society need be ashamed of, but on the contrary refer to it with satisfaction, as a farm worthy of the reputation of the Essex Agricultural Society.

There have been used upon the farm this year, as fertilizers, fish pomace to the value of $57.62, Stockbridge fertilizer costing $175, and sixty-two and three-fourths cords of barnyard manure. The products are,—of English hay, 15 tons; Meadow hay, 18 tons; Cabbages, 4818 heads; Potatoes, 403 bushels; Carrots, 250 bushels; Turnips, 820 bushels; Corn, in the ear, 1110 bushels; Beans, 10 bushels; Peas, 29 bushels; Apples, 116 barrels.

Benjamin P. Ware, *for the Committee.*

MANURES.

The Committee on Manures have been called upon to examine two reports of experiments, offered for premium, one made by Francis H. Appleton, of Peabody, and one by

Benjamin P. Ware, of Marblehead. Edmund Smith, of Newburyport, also presented a statement of an experiment which he did not enter for premium, but offered for publication. It was expected that Dr. James R. Nichols, Chairman of the Committee, would write a report to accompany these statements, but ill health prevented, much to the regret of the Committee and of himself, and we are sure the Society was thus deprived of a discussion of the subject of manures which at his hands could not fail to be instructive and interesting. The details of the experiments made by the applicants for premium, as well as by Mr. Smith, are very interesting and valuable, and the Committee recommend the award of the first premium of $15, to Francis H. Appleton, of Peabody, and the second premium of $10, to Benjamin P. Ware, of Marblehead. The experiments were very similar in their nature, all of them being trials of the relative value of barn-yard manure and Stockbridge fertilizer, and in two instances Darling's fertilizer. As was well stated by the Chairman of the Committee, "It is to be regretted that no information is given of the nature or composition of Darling's* fertilizer. The past season, owing to the extreme drought, was very unfortunate for experiments with commercial fertilizers. The wonder is that they were heard from at all." Notwithstanding this drawback, the experiments seem to give like results in each case, and are quite convincing. The whole subject of commercial fertilizers is of immense practical importance to farmers, and any reliable collection of facts showing their relative value as compared with barn-yard manure, or with each other, is of great value, and will be eagerly sought. It costs something to try experiments, and the fault with them usually is that the details are not kept with sufficient exact-

---

* NOTE.—From annual report by Professor Goessmann. *Darling's Animal Fertilizer with Potash.* Volatile and Organic Animal Matter, 56.50 per cent.; Ash constituents, 43.50; Moisture, 6.36; Nitrogen in Organic Matter, 8.58; Phosphoric Acid in Ash, 9.40: Potassium Oxide, 5.07; Insoluble Matter, 1.70.

Valuation of 2000 pounds.—171.6 pounds of Nitrogen, $36.04; 112.8 pounds of Phosphoric Acid, $11.28; 101.4 pounds of Potassium Oxide, $6.08. Total, $55.40.

Manufactured from blood-meat and bones of animals, with addition of potash.

ness. Probably in a majority of cases the farmer does not intend to make an experiment to be reported, when he enters upon it, but after its completion, knowing it to be of value to himself, he thinks it will be to others, and he then narrates the details from recollection. The value of many of the statements concerning crops raised and offered for premium, is materially lessened by the evident fact that they are estimates of cost made up after the crop is raised, rather than statements of details kept during the progress of its culture and growth. It is likely that in the item of labor there is generally more time actually laid out in the cultivation of a crop than appears in the statement, for the reason that the cost is *estimated*, and this because the farmer does not in the beginning expect to report his experiment. The great merit in the statements herewith submitted is, that the details of the experiments are given with unusual clearness and accuracy, and show what the crops actually did cost. Mr. Appleton kept his account of labor with a care we seldom see equalled in like cases. The three experiments *seem* to show that the Stockbridge fertilizer, and perhaps Darling's compound, are worth quite as much for a year as an equal value in animal manure. We know that when the latter is applied to the land, an important part remains for future crops. All, or nearly all commercial fertilizers heretofore in general use, have failed in this particular, and in most cases their constant and exclusive use has resulted in exhaustion of the land. Whether this is true of the Stockbridge and Darling compounds, is a point that can only be settled by protracted trial, and this we conceive to be a point on which our farmers earnestly desire more light. We hope the gentlemen who have given us the results of their experiments this year, as well as others who have made similar trials, will continue their experiments for the purpose of showing whether these newly introduced fertilizers can be profitably used, and the fertility of the soil kept undiminished, without the use of other manures.

Jos. S. Howe, *for the Committee.*

STATEMENT OF FRANCIS H. APPLETON.

I send in this statement of my experience in raising Indian Corn during the season of 1878, as it seems to me quite interesting, beyond being an accumulation of carefully made-up facts. As distances from barn, and other circumstances, vary in different fields, so must my figures vary from others of a similar kind.

I have taken much pains to keep an account in my diary of the time expended in the fields, from which my figures are taken. Both these crops were raised on worn-out sod land, upon which almost no grass could be cut in 1877. The one with stable manure makes by far the worst showing, even after deducting the cost of one-half of the manure, as being in the land and still good for next year's crops. In the case of the Stockbridge fertilizer crop, it will be seen that more fertilizer was applied than is generally recommended; and the question arises whether any of it still remains in the land for the next crop, or whether the extra quantity has been washed down too deep in the land to be available manure, on account of its greater solubility than stable manure. In my figures I have made no deduction for the value of any fertilizer that may remain in the land for next year's crop.

Had six bags only of the fertilizer been used (the general amount recommended by Bowker & Co., the makers,) with the same result, which would, theoretically, have been possible, and I given credit for the extra three bags, the cost would have been 19.4 cents for a bushel of corn on cob. The corn I used for seed, was the eight rowed variety.

In harrowing, cultivating and hilling, some saving could be made by employing an intelligent boy to drive, or ride the horses; and in the second cultivating, and the hilling, one careful man with a good horse would be all that is needed, the corn being high enough to perfectly mark the track for the horse. I also see in the "American Agriculturist" that three cents a bushel is the price to be paid for husking, which would decrease that charge one-half, where it could be done.

My experience has been that about twenty bushels per man in ten hours, was the amount husked.

I should state that I used the Ross machine, which sowed my corn in drills, and dropped the fertilizer immediately after the kernels, in such a manner that they did not fall in contact with each other, and the former has in no way seemed to have been injured by the latter. The Ross Hiller has also done me good service. By these machines I have been able to cultivate more land with my labor than I otherwise could.

Next year I intend to raise corn on a similar kind of land, with six bags of fertilizer to the acre, and shall hope to tell the result next year.

I report as follows:—3 acres, 31,424 feet of Indian Corn, on land which was run out in the previous year, excepting 21,329 feet where potatoes were raised with manure in 1877, and which was, in 1878, only enriched with fertilizer in drill; the remaining 3 acres, 10,095 feet was manured with stable manure at the rate of six cords to one acre, with the same fertilizer in drill. I have charged my labor at $1.50 per day of 10 hours, and each horse at 75 cents per day. Stable manure at $10 per cord, spread on the field. The manure was harrowed in by Randall wheel harrow. The time is given below in hours and minutes.

	Men. h.	m.	Horses. h.	m.	
Ploughing in Autumn of 1877	41	50	43	40	$ 6 55
22 1-2 cords stable manure					225 00
Harrowing (Randall) 19th April, lapping one-half	5	34	11	8	1 67
Harrowing (straight tools), 17th May " "	5	34	11	8	1 67
Sowing seed and fertilizer at same time (Ross Machine) 18 May	17	24	8	42	3 26
850 pounds Bowker's Hill and Drill Phosphate					21 25
Seed					1 20
Sowing after Crows. 1st June	6	40			1 00
2 cultivatings with "Scarifier"	20	27	10	13	4 86
1 hilling (Ross Machine), 6th July	13	20	6	40	2 50
Harvesting, 3 loads tops, cut 20th Sept	105		16		16 95
Harvesting, 7 loads corn and butts, 11th Oct	57		32		10 95
Husking 441 bushels, at 6 cents per bushel					26 46
Interest and taxes					12 02
					$335 34

5,175 pounds tops
16,600 " butts.

16,776 pounds stover at $6 per ton, $50 33
9 3-4 cords stable manure unused 97 50—$147 83

441 bushels corn on cob, $187 51
Equal to 1 bushel corn costing 42 1-2 cents.

One acre, 5,867 feet of Indian Corn on land which yielded a very light crop of Hungarian grass in 1877, without any manure or fertilizer. In 1878 it was manured with seven bags Stockbridge corn fertilizer, sown broadcast and harrowed in by Randall wheel harrow, and also two bags of same fertilizer in the drill. My charges are the same as I have already stated for the other field.

	Men.		Horses.		
	h.	m.	h.	m.	
Ploughing	7	34	15	8	$ 2 28
9 bags Stockbridge corn fertilizer (2 in drill)					45 00
Spreading fertilizer	1	42			26
Harrowing (Randall), lapping one-half	1	42	3	24	32
Harrowing (straight tools), " "	1	42	3	24	32
Sowing seed and fertilizer at the same time (Ross Machine),	3	24	1	42	64
Seed					30
2 cultivatings with "Scarifier"	6	48	3	24	1 28
1 hilling (Ross Machine)	3	24	1	42	64
Harvesting 1 load tops	39		6		6 30
Harvesting 6 loads corn and butts	12		8		2 40
Husking 184 bushels, at 6 cents per bushel					11 04
Interest and taxes					3 67
					$74 45

1,848 pounds tops
6,070 pounds butts

7,918 pounds stover at $6 per ton 23 75

184 bushels corn on cob $50 70
Equal to 1 bushel corn costing 27 1-2 cents.

Respectfully submitted,

FRANCIS H. APPLETON.

Peabody, Nov., 1878.

STATEMENT OF BENJAMIN P. WARE.

To the Committee on Experiments with Manures:—The land taken for my experiment with fertilizer, this year, is the same acre that was used for my experiment last year; this making the third year that it has been planted with corn, and only chemical fertilizers used. To this land I have added one-half an acre adjoining of the same quality of land. Last year this half acre was planted with corn and peas on a fair dressing of barnyard manure. The whole has been planted and cultivated by the Ross system of implements, which requires no hand labor except once weeding, and with that the field has been clean of weeds. By this system the cost of cultivating is very much reduced.

I divided the acre and one-half of land into four lots. On lot No. 1, (which contained the same land as lot No. 1 in my last year's experiment,) I spread on broadcast, after ploughing, 658 lbs. of Darling's Animal Fertilizer, which cost $13.36, and 70 lbs. Sulphate of Potash, costing $1.75, making a total of $15.11.

Lot No. 2 contained half an acre, and is the same as lot No. 2 of last year's experiment. I spread on as above three bags of Stockbridge Fertilizer, prepared and sold by Bowker & Co., at a cost of $15.

Lot No. 3, containing one-fourth of an acre, had no fertilizer whatever.

Lot No. 4, which also contained one-fourth of an acre, I manured with good quality of cow manure at the rate of 7 cords per acre, valued at $7 per cord. It was spread on after ploughing, and harrowed in as were the other fertilizers. The land was planted with corn May 20.

The cultivation was the same on the whole field, and the natural quality of the land as much alike as possible, being a gravelly subsoil, not subject to drought or wet; would be called good corn land. The corn was cut and stooked Sept. 15, and remained in stook until Nov. 11, when it was husked and weighed, being quite dry, 72 lbs. of ears yielded 56 lbs. of shelled corn.

Lot No. 1 produced 2193 lbs. of ears, (equal to 30 45-100 bushels of shelled corn,) and 1975 lbs. of stover.

Lot No. 2 produced 2210 lbs. of ears or 30 69-100 bushels shelled corn, and 2000 lbs. of stover.

Lot No. 3 produced 710 lbs. of ears or 9 86-100 bushels shelled corn, and 645 lbs. stover.

Lot No. 4 produced 985 lbs. of ears, or 12 98-100 bushels shelled corn, and 1136 lbs. stover.

Cost of cultivation per acre is as follows:—Ploughing, $1.75; Harrowing, $.75; Planting, $1.50; Cultivating three times, at .75, $2.25; Hand Weeding, $1.00; Cutting and Stooking, $4; Husking, $3; Carting in Stover, $3. Total, $17.25.

For convenience, I propose to reduce the results of the experiments to an acre, each lot, and summarize them as follows :—

Lot No. 1, fertilized with Darling's Animal Fertilizer, produced 60 9-10 bushels shelled corn, at a cost of 52 cts. per bushel. In 1877, on same lot and with same fertilizer, cost 39 cts. per bushel.

Lot No. 2, fertilized with Stockbridge Fertilizer, produced 61 38-100 bushels, at a cost of 50 9-10 cts. per bushel. In 1877, on same lot, with same fertilizer, cost 62 1-2 cts. per bushel.

Lot No. 3, with no fertilizer of any kind, produced 39 1-2 bushels, at a cost of 11 1-3 cts. per bushel.

Lot No. 4, fertilized with cow manure, produced 53 bushels, at a cost of 85 cts. per bushel.

BENJAMIN P. WARE.

STATEMENT OF EDMUND SMITH.

The soil on which this crop was raised is a dark sand. It is in Newbury, near Plum Bush Bridge, on the Plum Island Turnpike, and contains one acre. It is very little higher than the marsh adjoining, and is often covered by the tide. It has been in grass, but was pretty well run out. In 1877 it produced only three hundred pounds of hay. It was ploughed and harrowed May 28th. It was furrowed, and the fertilizers applied, the 29th, and one peck of corn planted the next day, the 30th; 400 lbs. of Stockbridge corn fertilizer costing $12.32, was applied to one-half by measure, and 334 lbs. of Darling's Animal Fertilizer, costing $7.52, to the other half; they were both applied by dropping a handful in the hill, covering with a hoe, with about three inches of soil, dropping five kernels of corn in the hill, and covering with the hoe, about three inches; the whole came up well, and grew rapidly. Cultivated both ways, and hoed the last week in June. Cultivated both ways July 23d; hoed August 2d and 3d. The crop was cut October 1st, tied in bundles, six hills to a bundle, and put in stooks immediately about twelve

bundles to a stook. October 18th, the corn was husked in the field, leaving the husks on the stover. The crop was weighed as taken from the field; the product being as follows:—From one-half acre, (Stockbridge), 2000 lbs; from one-half acre, (Darling's), 1791 lbs; Total, 3791 lbs.

No other manure or fertilizer was applied to the crop. A high tide, when the corn was about six inches high, flowed in a low place, of about fifty hills, to the depth of three inches on the Stockbridge, reducing the crop on that part some. The Darling, being nearest the marsh, was raided upon by the rats, destroying, in my judgment, considerable more of the crop than Stockbridge was injured by the tide. The corn was the eight rowed variety, and the percentage of unsound or pig corn, was very small. The stover (butts, husks and top stalks) were sold and weighed from the field, for $18.10, weighing, 5870 lbs. The financial statement is as follows:—

Interest and tax on land		$3 00
Seed		25
Ploughing and harrowing		6 00
Furrowing, applying fertilizers, and planting		6 25
Cultivating and hoeing twice		8 95
Cutting and stooking		2 75
Husking and harvesting		4 75
		$31 95
Cr., from Stockbridge, 2000 lbs. ears Corn	$20 00	
Half of Stover	9 05	
		$29 05
Dr., one-half of expense, as above	$15 97	
400 lbs. Stockbridge Fertilizer	12 32	$28 29
Profits on Stockbridge		$ .76
Cr., from Darling's, 1791 lbs. ears Corn	$17 91	
Half of Stover	9 05	
		$26 96

Amount brought up		$26 96
Dr., one-half expense, as above	$15 97	
334 lbs. Darling's Fertilizer	7 52	—$23 49
Profits on Darling's		$ 3 47

ESSAY.

CLEARING A NEW ENGLAND FARM OF BOULDERS,

BY JAMES J. H. GREGORY.

Boulders are the large stones, weighing from a few pounds to many tons each. They were more or less rounded in the course of their transportation from their parent ledges in the Northwest, long before man was created, as geologists tell us; such stones as we find on nearly all the farms of New England that are not along river courses and of alluvial formation. These are the stones that have given New England her network of stone fences, and which, when they abound on the surface, are considered in the popular judgment as indicating soil of good natural capacity.

When on or near the surface, every farmer finds that they interfere seriously with the cultivation and harvesting of his crops. They are in the path of all horse work; they are the nuclei around which gather bushes in the mowing and weeds in the tillage; they consecrate a large area around them to waste, where the plough never enters, and stones and general refuse accumulate; they are unsightly to the eye, and in the judgment of him who would buy, hold a first mortgage on the premises; and, finally, in the same proportion as agriculture progresses, all these objections grow in emphasis.

Shall the boulders be removed? The hard-worked, practical New England farmer replies by a counter question, "will it pay?" If a man has any leisure, of course it will always pay to invest his time in improvements; but if clear-

ing his land of boulders means giving time that the farmer recognizes other calls for, and especially if it means the employment of hired help, then the question becomes somewhat complex. When time given to this work means money, on many farms it would be cheaper to invest what it would cost to clear land of boulders in the purchase of land already cleared, the farmer showing practical wisdom under such circumstances in planting his boulder-covered acre to wood, throwing it into pasture, or still continuing to do the best he can with it, under the circumstances, as tillage.

There is, however, a large class of farmers, whose land, either from its natural quality or in its vicinity to a market, is so valuable that they are led seriously to discuss the practicability of removing these hereditary obstructions to their progress in thrifty farming. To that class I address myself. Let us examine the boulders as to their size, their number, how they lie, whether mostly above or below the surface, for digging around them is one of the serious items of cost, while those deeply sunk never blast as well as those near the surface, and when blasted require extra work to get them out of their deep beds. Again, we should regard the kind of rock they are of, for the granites smash up far better than the rocks into whose composition hornblend enters. Finally, the value the rock may have after removal is to be considered, either to the public for building purposes, or to the farmer himself. Sometimes this may come by using the rock for building some long needed house or barn. Having had to consider some of these points on three of my own farms, the past three years, while removing thousands of tons of boulders, I will present my method of dealing with these hard headed obstructionists, with what experience has taught me, always ready to light my taper at the lamp of any of my fellow farmers whose experience may supplement my own. The man with some patent lever will be apt to come along about the time you begin to start your boulders; a something to lift the boulder from its bed after a couple of stout hooks are fastened to it by holes an inch or so deep drilled into the

rock. Some of these save-labor contrivances are good in themselves, but my experience teaches that whether they are of value to you or not turns on the readiness with which you or your foreman take to the plan—for instance, one man will hit at once the knack of drilling these holes at the right angle, so that the hooks scarcely ever draw out, while with another the hooks as often as not draw out.

With me the lifting apparatus has not proved a profitable investment, while with my next neighbor it has worked well. After various experiments, I have found it more profitable to lay out the uncovering and drilling as piece work, paying a price per inch for drilling, which includes uncovering also, when the boulders need blasting; otherwise, then a special price for uncovering.

At the present time I pay six cents an inch, find powder and drills, and pay for the sharpening of the same. I have no doubt but that to many this reads like very good wages, and some shrewd yankee who is reading this is itching to get his pen and ink and offer better rate, with the idea that there is money in it. By the old time way of blasting, there would be very good wages to be made at these rates; but there has been a change in the character of explosives, and of these I have availed myself. My boulders are of all sizes, up to twenty tons to a single stone, but those we blast average about four tons weight. The average depth of the holes drilled was at the start about ten inches, but with increased experience and improved explosives, the depth has been decreased to the average of about five inches, while the diameter of the holes has at the same time been much lessened. The explosive I now use is Rendrock, an admixture of gunpowder while in a pasty state with nitro-glycerine. This powerful explosive, though well known and very generally in use by contractors on public works, is yet so little known by farmers in general that I think it will be worth while for me to give them an introduction to it, as its use enters so largely into the economy of handling boulders.

Rendrock is sold (I get mine of George H. Sampson, 25

Congress street, Boston) in paper cartridges of various sizes, at the rate of 50 cents for lots under 50 pounds. It is fired with a powerful cap, which cost two cents each. The material is generally used by tearing open the cartridge and taking as needed. As will be seen, it is over twice as costly as common blasting powder, but, as every farmer knows, the great cost in blasting is the drilling, and this is where the saving comes, as it will do as much execution as gunpowder in a hole of one-third the capacity. Again, it can be loaded far more readily; push it down hard with a stick, and inserting the cap, fill up with any coarse soil at hand, giving it one or two sharp pushes down with the same stick, put a few handfuls of earth above and any forty or fifty pound rock at hand on that. After, on firing, stand a good distance from the hole, as the rocks fly more than with common powder. There is capacity in this explosive which is wanting in gunpowder; that of blasting a rock by putting it on the surface, when any appearance of a seam can be detected. I have had boulders weighing ten tons, and very solid and hard ones too, knocked all to pieces without any hole having been drilled in them, the first attack being made in a small crevice, just large enough to receive a quarter of a pound of rendrock, which was plastered in there by hand, just like so much mortar. This "strained" an opening into the rock, and two more blasts finished the monster, reducing him into pieces so small that a single horse could handle the largest one. The capacity of smashing into smaller pieces, I find one of the good traits of rendrock. The extra power becomes of value in enabling one to do in a single blast what gunpowder would require two to accomplish. I had two such instances this morning, where fragments of two very large boulders were left in their respective holes that were too near the surface and needed removal; cartridges of rendrock thrust between them did the work capitally, when there was not working surface sufficient for powder to have done any work. As to any extra danger from this compound, there is none to any

man of common prudence, who knows how to treat a cow as a cow and a horse as a horse. Full instructions, with necessary precautions, come with the material, and if desired, a man is sent to give practical illustrations.

Having reduced our boulders to fragments that cattle can handle, what shall we do with them? For myself I have no market for them; having used up all needed for cellars, there still remain thousands of tons to be handled. My way of handling them is set forth in the wisdom of the old proverb, "make one hand wash the other." I need, as every farmer does, or should need, more or less soil for my compost heaps, amounting to some hundreds of cords annually. Having used all the waste that ditches and other resources afforded, I was driven to my pasture land, and had begun to make unsightly holes that pained me to look at,—when a resource occurred to me in the various roadways of the farm, leading to the different fields. I remove the surface soil as deep as of value (and for compost a portion of sand or hard-pan does no harm as an absorber of liquids), then dig a sufficient depth into the gravel to receive the boulders, tumble them in, fill up the spaces between with the smaller rocks, which I take from some of the too many walls, level off with the smaller stones, and finish with the gravel thrown out of the roadway. I could not afford to blast these boulders to make a roadway, nor to make a roadway simply to get rid of these boulders; but the compost material is the happy make-save—while at the same time I get a splendid road, completely underdrained, that knows nothing of the coming or going of frost, but is always as magnificent a road bed as the famous highways of the ancient Romans. If it were merely a question of sinking boulders and thus disposing of them, I question whether this would not be the still more economical way of management; for I have found when single stones are handled in this way, to make sure of getting them at the right depth below the reach of the plough, it is necessary to dig a hole much larger than the boulder; whereas, in the ex-

cavated roadway there is far less waste, while the digging that is necessarily all spade and pick work in individual holes, here is mostly done by the plough. If in handling blasted rocks I find some with good building faces, these I haul into some waste angle, to avail myself of their possibilities. This, my fellow farmers, is the best paying way I have yet found for disposing of these obdurate tenants-at-will, whose principal business, since the coming of civilization, has been to break, or wear away plough points and strain the patience of industry. The other day I studied the record of a single stone measuring two feet by two and a half. On its hard greenstone face, located just below the surface of the soil, I counted, side by side, as close as they could stand, over forty well-defined grooves made by the points of ploughs, all along down from the ancient Puritan days, to the present year of possession. With feelings somewhat allied to indignation, I pitched that stone into the bottom of my roadway trench, and so closed the record.

ESSAYS AND REPORTS OF COMMITTEES.

The Committee on Essays and Farm Accounts would report that but one essay was offered for premium, and no statement of "actual farm accounts." As the authorship of the essay was (without thought evidently), made known to the Committee, they felt that they could not deliberately transcend the rules of the Society by considering a premium in connection with it, though, with the author's consent, the essay is published. For the best report, they award the first premium, of $10, to D. W. Low, of Gloucester, for the report on Pears. There are other valuable reports, like that on Manures, for instance; but as the chief value lies in the statements which accompany experiments that are the subject of distinct premium, the Committee did not feel that they could, in such cases, grant additional premiums.

N. A. Horton, D. E. Safford, C. P. Preston—*Committee.*

E. H. PAYSON, TREASURER, IN ACCOUNT WITH THE ESSEX AGRICULTURAL SOCIETY.

1877.	Dr.	
October.	To balance of former account	$ 75 65
	To Bank dividends	413 10
	To State Bounty	600 00
October 26.	To D. F. Appleton	25 00
November 15.	To Receipts at Lawrence per Committee's Report	2277 92
December 13.	To State Tax refunded	191 56
1878.		
February 2.	To Revere Bank on reduction of Capital	208 25
April 1.	To Bank dividends	407 30
May 5.	To Treadwell Farm	500 00
September 19.	To Coupons Essex Railroad	42 00
	To Premiums unclaimed	175 00
	To received of New Members	111 00
		5026 78

1877.	Cr.		
October.	By Premiums and Gratuities awarded by the Society		$1802 00
1877			
November.	By Expenses of Exhibition per Committee's Account at Lawrence	$1781 19	
	By Expenses paid by the Treasurer	71 05	1852 24
	By Printing bills		419 93
	By Secretary's account		241 37
	By balance to new account		711 24
			$5026 78

FUNDS BELONGING TO THE SOCIETY.

	Cost.	*Market Val.*
5 shares First National Bank in Danvers	$ 375 00	$ 472 00
16 shares Warren National Bank, of Peabody	1,595 40	2,000 00
8 shares National Exchange Bank, of Salem	800 00	840 00
18 shares First National Bank, of Salem	1,914 66	2,000 00
12 shares Mercantile National Bank, of Salem	1,226 50	1,250 00
23 shares Merchants National Bank, of Salem	1,189 50	1,338 00
15 shares South Danvers National Bank	1,471 25	2,000 00
3 National Revere Bank, of Boston	377 62	300 00
42 shares Asiatic National Bank	1,281 25	1,600 00
18 shares Salem National	2,000 00	2.100 00
Essex Railroad bonds	700 00	700 00
Cash on hand as above	711 24	711 24
	$13,642 42	$15,311 24
This amount last year was	$13,215 08	
Being a gain this year of	427 34	

EDWARD H. PAYSON, Treas.

Salem, Sept., 1878.

The undersigned have examined the within account of receipts and disbursements of the Treasurer, and also his statement of the funds belonging to the Society, showing a balance in his hands of $711.24, and find the same correctly cast and properly vouched, and the investment according to the schednle.

JOS. H. PHIPPEN,
G L. STREETER. } Auditors.

Salem, Jan. 15th, 1879.

OFFICERS OF THE SOCIETY.

FOR 1878-79.

PRESIDENT.

BENJAMIN P. WARE, of Marblehead.

VICE PRESIDENTS.

GEORGE B. LORING, of Salem.
JAS. J. H. GREGORY, of Marblehead.
THOMAS K. LEACH, of Topsfield.
THOS. C. THURLOW, of West Newbury.

SECRETARY.

CHARLES P. PRESTON, of Danvers.

TREASURER.

EDWARD H. PAYSON, of Salem.

HONORARY TRUSTEES.

JOSEPH HOW, of Methuen.
WILLIAM SUTTON, of Peabody.

TRUSTEES.

M. C. Andrews, Andover;
Francis R. Allen, Hamilton;
O. S. Bailey, Amesbury;
William Cogswell, Bradford;
Wm. B. Carlton, Haverhill;
John H. Cheever, Manchester;
W. H. B. Currier, Salisbury;
Zachariah Cole, Wenham;
Levi Emery, Lawrence;
Henry W. Foster, Beverly;
J. P. Foster, No. Andover;
J. J. H. Gregory, Marblehead;
A. E. Goodwin, Merrimac;
Ariel H. Gould, Topsfield;
Geo. L. Hawkes, Lynnfield;
J. Sidney Howe, Methuen;
Samuel Hawkes, Saugus;
Romulus Jaques, W. Newbury;

James P. King, Peabody;
Aaron Low, Essex;
David W. Low, Gloucester;
John W. Marshall, Rockport;
Chas. P. Mighill, Rowley;
Sherman Nelson, Georgetown;
Sidney F. Newman, Newbury;
John M. Pearl, Boxford;
Ansel W. Putnam, Danvers;
John P. Palmer, Swampscott;
Abel Stickney, Groveland;
Nathaniel Shatswell, Ipswich;
John L. Shorey, Lynn;
David Stiles, Middleton;
J. O. Winkley, Newburyport;
Horace C. Ware, Salem.

NEW MEMBERS, 1878.

Moses B. Abbott, Andover;
John W. Allen, Newbury;
J. E. Bradstreet, Bradford;
George W. Bray, Newbury;
Samuel G. Bean, Andover;
Frank J. Bradley, Methuen;
W. H. Butters, Methuen;
Dan'l A. Carlton, N. Andover;
John W. Carter, Beverly;
William Dodge, Wenham;
Mrs. John Day, Boxford;
Geo. E. Davis, N. Andover;
Geo. L. Flook, W. Newbury;
B. G. Gutterson, Methuen;
H. M. George, Saugus;
John Goodwin, Lawrence;
C. D. Hunking, Haverhill;
David W. Noyes, Methuen;
John O'Brien, Bradford;
A. M. Robinson, Andover;
E. P. Robinson, Hamilton;
Benj. F. Smith, Andover;
Henry Small, Lawrence;
J. E. Thurlow, Methuen;
George H. Taylor, Wenham;
F. M. Victor, Lawrence.

☞ Any citizen in the County may become a member by paying the sum of three dollars to increase the permanent funds of the Society, and he will receive a certificate of his membership from the Secretary. No fines or assessments are ever imposed. Members are entitled to the free use of the Library, and a copy of the Transactions each year. All ordained Ministers of the Gospel residing in the County, and editors of newspapers, published therein, are entitled to the privileges of the Library.

LIST OF PREMIUMS, &c.

FAT CATTLE.

Charles A. Butterfield, North Andover, second premium,	$10 00

BULLS.

Wm. A. Russell, Lawrence, Holstein Bull with five calves, first premium,	$15 00
Chas. S. Bradley, West Newbury, Devon, second premium,	6 00
Chas. S. Bradley, West Newbury, Durham, second premium,	4 00
Wm. A. Russell, Lawrence, Holstein under two years, first premium,	6 00
Chas. Perley, Boxford, Ayrshire bull, first premium,	10 00
Doane Cogswell, Bradford, second premium,	6 00
J. D. W. French, North Andover, Ayrshire bull under two years old, first premium,	6 00
S. F. Newman, Newbury, second premium,	4 00
Geo. W. Russell, Lawrence, Jersey under two years, first premium,	6 00

MILCH COWS.

Wm. A. Russell, Lawrence, Holstein, special premium,	$25 00
Wm. A. Russell, Lawrence, Holstein best milch cow, first premium,	12 00
J. D. W. French, North Andover, Ayrshire, second premium	9 00
J. D. W. French, North Andover, Ayrshire cow, first premium,	12 00
J. D. W. French, North Andover, second premium,	6 00
Chas. O. Cummings, Andover, Jersey, first premium,	12 00
Wm. A. Russell, Lawrence, Holstein, first premium,	12 00
Wm. A. Russell, Lawrence, second premium,	6 00
David W. Noyes, Methuen, Grade, first premium,	12 00
J. E. Thurlow, Methuen, second premium,	6 00

HERD OF MILCH COWS.

Chas. Perley, Boxford, first premium,	$18 00
Wm. A. Russell, Lawrence, second premium,	12 00

HEIFERS.

Chas. Perley, Boxford, thoroughbred Ayrshire in milk, first premium,	$12 00
J. D. W. French, North Andover, second premium,	6 00
Frank J. Bradley, Methuen, grades in milk, first premium,	12 00
G. S. Phippen, Methuen, second premium,	6 00
J. D. W. French, North Andover, thoroughbred Ayrshires that had never calved, first premium,	6 00
Chas. Perley, Boxford, second premium,	4 00
Wm. A. Russell, Lawrence, thoroughbred Holstein that had never calved, first premium,	6 00
C. S. Bradley, West Newbury, thoroughbred Durham that had never calved, first premium,	6 00
C. S. Bradley, West Newbury, thoroughbred Devon that had never calved, first premium,	6 00
S. F. Newman, Newbury, grades that had never calved, first premium,	6 00
M. C. Andrews, second premium,	4 00
Charles Perley, Boxford, heifer calves, first premium,	5 00
S. F. Newman, Newbury, second premium,	3 00

WORKING OXEN AND STEERS.

Jas. H. Reynolds, North Andover, Oxen, first premium,	$12 00
A. M. Bodwell, Lawrence, second premium,	10 00
G. F. Mason, Andover, third premium,	8 00
B. H. Farnham, North Andover, Steers, first premium,	10 00
R. S. Bray, Newbury, second premium,	6 00

TOWN TEAMS.

Town of North Andover, 18 yokes of oxen, first premium,	$30 00
Town of North Andover, 7 pairs of horses, first premium,	30 00

STEERS.

Byron K. Farnham, North Andover, first premium,	$5 00
Benj. and Ralph Farnham, North Andover, second premium,	4 00
Benj. and Ralph Farnham, No. Andover, steer calves, gratuity,	3 00

STALLIONS.

G. W. Russell, Lawrence, Stallion with 5 colts, premium,	$25 00
J. G. McAllister, Lawrence, four years old, first premium,	15 00
Chas. S. Clark, Salem, second premium,	10 00
H. M. George, Saugus, three years old, first premium,	10 00
Daniel Tenney, Newbury, second premium,	6 00

BROOD MARES.

B. G. Gutterson, Methuen, mare and foal, first premium,	$15 00
P. B. Gutterson, second premium,	10 00
Henry Small, Lawrence, third premium,	8 00

FAMILY HORSES.

C. D. Hunking, Haverhill, first premium,	$15 00
Samuel G. Bean, Andover, second premium,	10 00
Geo. F. Mason, Andover, third premium,	8 00

FARM AND DRAFT HORSES.

Wm. A. Dane, Hamilton, first premium,	$15 00
W. H. Butters, Methuen, second premium,	12 00
Joshua N. Kent, Newbury, third premium,	10 00
D. L. Goodrich, West Newbury, fourth premium,	6 00

PAIRS OF DRAFT HORSES.

Oliver Stevens, North Andover, first premium,	$15 00
Geo. W. Bray, Newbury, second premium,	10 00

COLTS—FIRST CLASS.

Henry Riley, North Andover, colt 4 years old, first premium,	$12 00
Geo. E. Davis, North Andover, second premium,	8 00
S. P. Bradley, Haverhill, third premium,	5 00
Goodwin Bros., Lawrence, colt three years old, first premium,	10 00
Geo. W. Russell, second premium,	5 00

COLTS—SECOND CLASS.

S. M. Titcomb, Newbury, two years old, first premium,	$8 00
Geo. B. Bradley, Methuen, second premium,	5 00
Peter Holt, Andover, yearling, first premium,	6 00
H. M. George, Saugus, second premium,	4 00

SWINE.

J. D. W. French, North Andover, breeding sow, small bone, first premium,	$10 00
B. H. Farnham, second premium,	6 00
Chas. Perley, Boxford, boar do., first premium,	10 00
J. D. W. French, North Andover, second premium,	6 00
Albert Berry, North Andover, breeding sow, large bone, first premium,	10 00
Daniel Carleton, North Andover, second premium,	6 00
Albert Berry, North Andover, weaned pigs, large bone, first premium,	10 00
J. F. Colquohoun, Lawrence, second premium,	6 00
Levi Emery, Lawrence, boar, large bone, second premium,	6 00

SHEEP.

Chas. Perley, Boxford, buck, first premium,	$8 00
Chas. Haseltine, Bradford, flock, first premium,	10 00

PLOUGHING—DOUBLE TEAMS.

Jaques & Bray, Newbury, first premium,	$12 00
Joseph Goodrich, West Newbury, second premium,	10 00
Edward Adams, North Andover, third premium,	9 00
Frank J. Bradley, Methuen, fourth premium,	8 00

PLOUGHING—SINGLE TEAM.

R. T. Jaques, Newbury, first premium,	$10 00

PLOUGHING—WITH HORSES.

Paul T. Winkley, Newburyport, first premium,	$12 00
H. M. Goodrich & A. L. Plummer, West Newbury, second premium,	10 00
A. T. Newhall, Newburyport, third premium,	8 00
T. O. Wardwell, North Andover, fourth premium,	6 00
R. S. Bray, Newbury, fifth premium,	4 00

PLOUGHING—WITH THREE OR MORE HORSES.

Sidney F. Newman, Newbury, and J. N. Kent, first premium,	$10 00
Geo. W. Bray, Newbury, second premium,	6 00

PLOUGHING—SWIVEL PLOUGH.

Wm. A. Russell, Lawrence, first premium,	$12 00

FARMS.

Samuel Dane, Hamilton, first premium,	$30 00

EXPERIMENTS WITH MANURES.

Francis H. Appleton, Peabody, first premium,	$15 00
Benj. P. Ware, Marblehead, second premium,	10 00

GRAIN CROPS.

J. B. Knight, Newbury, Rye Crop, first premium,	$10 00
John Pearl, Boxford, Corn, first premium,	10 00
Abel S. Harriman, Groveland, Corn, gratuity,	6 00
Nathaniel Little, Newbury, Wheat, first premium,	10 00

ROOT CROPS.

J. B. Knight, Newbury, Potato Crop, first premium,	$10 00
J. J. H. Gregory, Marblehead, Cabbage Crop, first premium	10 00
G. A. Randall, Newbury, Onion Crop, first premium,	10 00

REPORTS OF COMMITTEES.

David W. Low, Gloucester, first premium,	10 00

Awarded by the Committee on Agricultural Implements,	$ 40 00
" " " Carriages,	10 00
" " " Dairy,	41 00
" " " Poultry,	41 00

Awarded by the Committee on			Bread,	14 00
"	"	"	Fruits,	266 00
"	"	"	Flowers,	55 00
"	"	"	Vegetables and Seeds,	150 00
"	"	"	Counterpanes and Rugs,	20 00
"	"	"	Leather Goods,	11 00
"	"	"	Manufactures, &c.,	26 00
"	"	"	Fancy Work, &c.,	72 00
"	"	"	Work by Children,	15 00
		Total,		$1,775 00

RECAPITULATION.

FARMS.

Amount awarded to			Farm,	$ 30 00	
"	"	"	Ploughing,	117 00	
"	"	"	Experiments with Manures,	25 00	—$172 00

FARM STOCK.

Amount awarded to			Fat Cattle,	$ 10 00	
"	"	"	Bulls,	63 00	
"	"	"	Milch Cows,	112 00	
"	"	"	Herd Milch Cows,	30 00	
"	"	"	Heifers,	82 00	
"	"	"	Working Oxen, &c.,	46 00	
"	"	"	Town Teams,	60 00	
"	"	"	Steers,	12 00	
"	"	"	Stallions,	66 00	
"	"	"	Brood Mares,	33 00	
"	"	"	Family Horses,	33 00	
"	"	"	Farm and Draft Horses,	43 00	
"	"	"	Pairs of Draft Horses,	25 00	
"	"	"	Colts,	63 00	
"	"	"	Swine,	70 00	
"	"	"	Sheep,	18 00	
"	"	"	Poultry,	41 00	—$807 00

FARM PRODUCTS.

Amount awarded to Fruit,	$266 00	
" " " Flowers,	55 00	
" " " Vegetables, &c.,	150 00	
" " " Grain Crops,	36 00	
" " " Root Crops,	30 00	
" " " all other objects,	259 00	—$796 00
Total,		$1,775 00

LIST OF MEMBERS

OF THE

Essex Agricultural Society.

NOTE — Those marked with a * deceased since 1869; with † removed from the county. For Names of members deceased previous to 1869, refer to list published that year.

AMESBURY.

Bailey, O. S.
*Bailey, Thomas
†Binney, William C.
Hill, J. Henry
Huntington, B. F.
Jones, Philip
†Moore, Appleton
Morse, Daniel L.
*Morse, John S.
*Nichols, Stephen, Jr.
Sawyer, Aaron.

ANDOVER.

Abbott, Nathan F.
Abbott Asa A.
Abbott, George A.
Abbott, Moses B.
Abbott, Hartwell B.
Abbott, John B.
Abbott, Jonathan
*Abbott, Moody B.
Abbott, Stephen D.
*Abbott, Sylvester
Andrews, M. C.
*Ballard, Joshua
Bardwell, Simeon
Barnard, Edward H.
Bailey, Moses A.
Bean, Samuel G.
Blunt, Charles C.
*Bond, William
Buchan, George
Callahan, Robert
Carter, Charles S.
Carruth, Isaac
†Chamberlain, N. Jr.
*Chandler, Joseph
Chever, James O.
Chickering, William
*Chipman, Degrass
*Clark, Hobart
Chandler, Joshua H.
Cummings, C. O.
Downing, J. J.
*Farnham, John C.
*Flint, John
Foster, George
Foster, George W.
Foster, Moses
*Foster, Thomas C.
Flint, John H.
Foster, George C.
*Gray, David
Gutterson George
Harnden, Henry C.
Hazen, Nathan W.
Hidden, David I. C.
*Holt, Dean
Holt, E. F.
*Holt, Herman
*Holt, H. P.
Jenkins, John B.
Jenkins, E. Kendall
Johnson, Francis H.
Johnson, S. K
Kimball, Walter H.
Mason, George F.
*Merrill, William
Morton, Marcus
*Needham, Samuel
*Pettingill, Merrill
*Phelps, Herman
Pillsbury, Paul P.
Raymond, Samuel
Rea, Jasper
Robinson, Addison M.
Rogers, Fitzwilliam
Smith, Peter
Smith, Jas. B.
Smith, John L.
Smith, Benj. F.
Upton, Edward C.
*Whittier, Nathaniel

BEVERLY.

Appleton, Isaac
Avery, Mark B.
Baker, John I.
Baker, Stephens
Bell, John
Burnham, O. B.
Carter, John W.
Chase, Samuel
Conelly, Stephen
Cressy, Joseph
Dodge, Aaron
Dodge, Andrew
Dodge, Benjamin N.
Dodge, Benjamin S.
Dodge, Joshua S.
Dodge, Richard
Dodge, Forest C.
Dodge, Walter F.
*Dodge, William E.
Edwards, Ephraim A.
Edwards, Israel O.
Foster, David L.
Foster, Henry W.
*Friend, Seth
Friend, Seth
Giles, Benjamin V.
Gould, Thomas
*Hathaway, John
Haven, Franklin
Herrick, Joseph H.
Hill, Hugh
Johnson, Geo. E.
Larcom, David
*Lord, Abraham
Lord, Cyrus W.
Lawrence, C. A.
Lovett, Francis S.
Lummus, E. E.
*Marshall, Timothy
Mason, Alfred A.
Mason, Alphonso
Mason, George
Mason, Lyman
Meacom, John
Mitchell, John
Mitchell, Charles
Munsey, John G.
Paine, Charles C.
Pitman, Mark
Porter, Adoniram
*Porter, John
†Porter, Robert
Raymond, John W.
†Safford, Nathaniel T.
*Sheldon, Jesse
Standley, Sam'l D. G.
*Scott, Benjamin
Stephens, Augustus
Trask, James W.
Walker, Lawson
Waters, Richard P.
†Waters, William C.
Wilson, Joseph

BOXFORD.

Anderson, Chas. R.
Andrew, Isaac W.
Barnes, B. S.
Chadwick, Geo. W.
Cleveland, James P.
*Cleveland, Wm. N.
Cole, David M.
Cole, John K.
*Curtis, Francis
Day, John
Day, Mrs. John
*Day, Joshua T.
†Gould, Jacob
*Hale, Isaac
Hale, John
Harriman, Daniel F.
Herrick, Israel
Killam, Oliver P.
Kimball, Samuel
Ladd, John I.
†Palmer, Chas. Lane
Palmer, F. H.
Peabody, Stephen
Pearl, John M.
Perley, Charles
Sawyer, Thomas
Wood, Enoch
Wood, John T.

BRADFORD.

Bradstreet, Justin E.
*Carlton, James T.
*Chadwick, Henry M.
Cogswell, Doane
Cogswell, George
Cogswell, William
Day, Albert J.
Day, Hiram
Day, Lafayette
Day, Royal
*Elliot, William
Ellis, John A.
Emerson, Charles B.
Haseltine, Thomas
Haseltine, William
*Holt, H. E.
Hopkinson, Sam'l W.
Johnson, A. P.
*Johnson, Charles G.
Johnson, Laburton
Kimball, Albert

Kimball, A. Laburton
*Kimball, David
Kimball, Henry G.
Kimball, Leverett
*Kimball, Seth
*Kimball, Sylvester
Kimball, William B.
Kimball, W. Eustace
Little, M. P., Mrs.
*Locke, Oliver
Merrill, John F.
Morse, C. E.
O'Brien, John
Ordway, Alfred
*Ordway, Enoch F.
Ordway, G. W.
Ordway, Warren
Peabody, Frank
Peabody, Daniel
Perley, John
Perry, Samuel B.
†Sawyer, Samuel C.
Tewksbury, John B.
Thornton, William
Webster, Charles E.

DANVERS.

Abbott, L. L.
Allen, Henry C.
†Adams, Marshall C.
Bartlett, James A.
Berry, Allen A.
Berry, Eben G.
Batchelder, J. Q. A.
Bradstreet, Elijah
Blake, John A.
Brown, William H.
Barnard, Willis
Black, William
Boardman, I. P.
Brown, Amos
*Brown, Charles W.
Butler, J. C.
Clark, N. J.
*Cummings, Sam'l P.
†Devereux, Geo. F.
Demsey, L. P.
Dodge, Elnathan
Dodge, Francis
*Dodge, William, Jr.
Eaton, Winslow W.
Fellows, Alfred
Fisher, Franklin W.
Faxon, George
Fowler, Augustus
Fowler, Samuel P.
Fuller, Solomon
*French, George W.
Gaffny, Cornelius
Gookin, Samuel F.
Gould Charles H.
Grosvenor, David A.
Grout, John
†Holden, Seth
Hyde, Elisha G.
Hill, Edward L.
*Ham, Elias
Hood, R. B.
†Hatch, W. G.
Hathaway, D C.
Hood, Joseph E.
Hutchinson, Edward
†Ham, Albert G.
Kimball, Joel, Jr.
Kirby, Patrick
Lane, Benjamin T.
Langley, J. R.
Lawrie, James
Learoyd, A. P.
Lefavor, Mrs.
Legro, Edmund
Legro, John C. P.
Lewis, Samuel W.
Lyford, Francis W.
*Massey, S. D.
Martin, George B.
Martin. Walter F.
McCrillis, Ransom F.
*Merrill, Ernest S.
Merrill, Levi
Merrill, Walter S.
Moulton, Beverly S.
Mudge, Edwin
Mudge, Augustus
†Murphy, Patrick
Nichols, Andrew
Newhall, Benj. E.
Nourse, Samuel W.
Page, Nathan, Jr.
Patch, Abraham, Jr.
Peart, William B.
Perley, A. P.
*Perley, Frederick
Perkins, Henry A.
Perley, Edward P.
Perry, James M.
Pettingill, David A.
Peabody, George H.
Pillsbury, H. H.
Pope, Ira P.
Porter, Benjamin F.
Pratt, Amos,
Preston, Charles P.
*Preston, John
*Preston, John S.
*Preston, Samuel
Prince, Amos
Putnam, Ansel W.
Putnam, Charles O.
*Putnam, Eben
Putnam, Edwin F.
Putnam, Francis P.
Putnam, Israel H.
Putnam, Joseph C.
Putnam, J. A.
Putnam, Joel
Putnam, Orrin
Putnam, Otis F.
*Putnam, Rufus
Pratt, George
Porter, John W.
Pope, Daniel P.
Richardson, J. B.
Richardson, James
Richards. Daniel

Richards, C. S.
Richards, Geo. D.
Ropes, Joseph W.
Rice, Charles B.
Sears, John A.
Silvester, Joshua
Spaulding, Sam'l W.
Swan, Sylvanus B.
Swinerton, John
Smart, John L.
Swazey, E.
Spring, Jacob E.
Tapley, Charles
Tapley, George
*Tapley, Gilbert
Tapley, Gilbert A.
*Tapley, Nathan
*Tufts, Benjamin F.
Tracy, Joseph
Upton, Franklin W.
Waite, Peter
Walcott, Wm. H.
Waldron, E. T.
Wallis, Samuel
Warren, Aaron W.
*Warren, Jonas
Weston, Wm. L.
White, Amos A.
White, Henry A.
*Wilkins, Joel
Woodis, Alden B.
Whipple, John F.
Wilkins, Fred'k A.

ESSEX.

Andrews, Elias
*Andrews, Elihu
Andrews, Joseph
Andrews, Miles S.
Burnham, D. Brainard
Burnham, Ira F.
Burnham, Washington
Burnham, Wm. Howe
*Choate, David
Choate, Rufus
Cogswell, Chas. B.
Dodge, Grover
Haskell, David L.
Haskell, George
Knowlton, Aaron
Knowlton, David
Knowlton, Moses
Knowlton, Herbert A.
Knowlton, Perry B.
Lee, Edward K.
Low, Aaron
Low, Josiah
Lufkin, A. E.
McDonald, Daniel
Mears, Wm. H.
Perkins, John
Story, Andrew
Story, Ephraim

GEORGETOWN.

*Adams, George E.
Bateman, A. P.
*Boynton, George W.
Butler, Oliver S.
Chapman, Jonathan
Dole, Moody S.
Dole, Richmond
Harriman, Hiram N.
Hoyt, John A.
Illsley, I. Adams
Jewett, Jacob F.
*Jewett, Robert
Lambert, Nathaniel
Little, Samuel
Lovering, John H.
Moulton, Daniel E.
*Nelson, Charles
Nelson, Sherman
Nelson, Solomon
Nelson, William
Osgood, Stephen
Pettingill, Henry
Pillsbury, J.
Poor, Samuel T.
Preston, John
*Sanborn, George W.
Spofford, Sumner P.
Tenney, George J.
Tenney, Gorham D.
Tenney, Milton G.
Tenney, Moses
Tenney, Orlando B.
Tenney, Richard
Wheeler, William S.
*Wildes, Green,
*Wilson, Issac

GLOUCESTER.

Atkinson, John
Babson, Daniel T.
Babson, Fitz J.
†Babson, Gustavus, Jr.
Babson, Horatio
Babson, John J.
Barrett, Charles P.
Bradford, George R.
Bray, Aaron W.
Brown, Edward H.
Burnham, A. M.
Burnham, H. A.

Burnham, S. A.
Butler, Benjamin F.
Calef, John C.
Campbell, C. H.
Carter, John S.
Carter, Sherman J.
Clark, John
Cole, Israel H.
Conant, Thomas
Cook, Benjamin F.
Corliss, Benjamin H.
Corliss, John
Cressy, Curtis C.
Cronin, John
Dale, Eben, Jr.
Davis, James
Davis, William P.
Day, Abraham
Dennin, George
Dennison, C. W.
Dodd, Stephen
Dolliver, John H.
Dolliver, William C.
Dolliver, William P.
Dyer, J. Franklin
Emanuel, Henry
Fears, Robert
Fears, Robert R.
Ferguson, Thomas B.
Foster, Jeremiah
Friend, Elbridge G.
Garland, Joseph
Gilbert, Addison
Griffin, Bennett
Griswold, A.
Grover, Charles E.
Harvey, Alonzo F.
Haskell, H. C. L.
*Haskell, Thomas
Haskell, William H.
Herrick, Gardner W.
*Hough, Benjamin K.
*Hoyt, Edward C.
James, George
James, Samuel
Knowles, Thomas J.
Lane, Andrew
Lane, George
Lancaster, T. S.
Lawrence, R. C.
*Lindberg, A. F.
Loring, Francis M.
Lovett, John H.
Low, David W.
Low, Gorham P.
Marr, Chester, Jr.
Mayo, Israel C.
Mayo, Josiah, Jr.
Merchant, E. W.
Norwood, George
Parsons, William, 2d
Parsons, W. Frank
Patch, Isaac
Pattillo, Alexander
*Pearce, Edward H.
Perrin, Henry S.
*Perrin, William H.
Pew, William A.
Phillips, N. H.
Plummer, David
Presson, David S.
Price, Augustus E.
Proctor, Joseph O.
Proctor, Wilbur, F.
Ricker, Richard W.
Roberts, Joshua
Rogers, Allen
Rogers, John S.
Rogers, John S. E.
Rust, William P.
Sanford, H. G.
Sawyer, Samuel E.
Shepard, Joseph C.
Smith, Benjamin H.
Somes, John E.
Stacey, Eli F.
Stacey, John H.
Stanwood, Barnard
*Staten, Edward
*Stevens, Zachariah
Story, Cyrus
Thompson, Charles P.
Tibbetts, Robert A.
Todd, John
Webster, Nathaniel
Wetherell, M. L.
Wilson, John J.
Witham, Addison
Wonson, Augustus H.
Wonson, F. G.
Wonson, George M.
Wonson, J. W.
York, Nathaniel S.

GROVELAND.

Atwood, Daniel
Atwood, Moses P.
Baleh, Thomas H.
Burbank, John
*Clark, Elijah
Curtis, Edwin T.
†Day, Isaac C.
Fegan, Henry C.
George Edwin B.
Hardy, Ira
Harrington, Edward
Hopkinson, W. H.
*Kimball, Charles
Ladd, Nathaniel E
Longfellow, Samuel
*Ordway, Leverett S.
Ordway, Moody
*Parker, Benjamin
Parker, Eldred S.
Pemberton, L. K.
Savary, Charles G.
Savary, Charles P.
Spofford, Jeremiah
Spofford, Morris
Stickney, Abel
Stickney, Charles
*Stickney, Daniel H.
Stickney, Niles T.
Stiles, Charles F.
Walker, George S.
Wardwell, Z. C.
Woodman, Ira S.

HAMILTON.

Abbott, Joseph B.
Allen, Francis R.
*Brown, Jacob
Brown, William A.
Creamer. Geo. C.
Dane, Ephraim A.
*Dane, Francis
*Dane, George
Dane, George E. F.
Dane, Samuel
Dane, William A.
Dane, Sylvester
Dodge, Albert W.
*Dodge, Allen W.
Dodge, Emerson P.
Dodge, George B.
Dunnels, Ira A.
Ellis, George W.
Gregory, Samuel B.
Kimball, Isaac W.
Knowlton, Isaac
Knowlton, Isaac F.
Knowlton, Joseph
Lamson, Jarvis
*Morgan, Luther S.
Norris, George
Patch, Mrs. Oliver
Porter, Dudley H.
Porter, Oliver
Rankin, Eli C.
Rankin, George C.
Robinson, E. P.
Safford, Daniel E.
Smith, Alvin
Smith, John
*Whittredge, John
Whipple, Em. A.
Winslow, Aaron
Winslow, G. W.

HAVERHILL.

Berry, J. M.
*Bartlett, James A.
Bodwell, Stephen
Brickett, Barnard
Brickett, Daniel
*Brickett, Daniel H.
Brickett, Franklin
Butters, Charles
Caldwell, William
*Carlton, John
Carlton, Samuel
Carlton, William B.
Carlton, Nathaniel
Chase, Abel W.
Chase, C. W.
Cheever, H. W.
*Clark, William P.
†Coburn, A. M.
Coffin, George
Cook, Justin T.
Corliss, Charles
Cummings, Henry
Currier, Samuel M.
Cushman, R. P.
Davis, George W.
Davis, Phineas E.
Dewhurst, James
*Dunbar, Charles H.
Duncan, George W.
Eaton, Harrison
Elliott, Samuel
Elliott, Samuel H.
Emerson, Albert
Emery, Benjamin E.
Emery, Moses G. J.
Farnsworth, J. H.
†Farrar, Joseph E.
Fellows, Samuel
Fitts, D. F.
Flanders, Daniel D.
†Fletcher, Edmund
*Frothingham, E. G.
Gale, John E.
Gale, James E.
Gage, Edmund
*Gardner, John
Goodwin, Rufus
*George, M. D.
Gile, James F.
Gilman, John P.
Goodrich, T. J.
Grieves, J.
Hale, Samuel
*Harding, Thomas
*Harmon, David P.
Haseltine, Amos, Jr.
*Haseltine, Hazen
Holt, Charles
†Hooke, Daniel
Howe, Moses
*Howe, Nathaniel S.
*Hoyt, George H.
*Hoyt, Humphrey
Hunking, C. D.
Ingalls, E. T.
Jeffers, William
*Keeley, John
*Kittredge, Alfred
Lackey, Andrew
†Lee, George W.
†Little, Edmund B.
Little, J. G. S.
Marsh, John J.
Merrill, William
Mitchell, E.
Mitchell, Seth K.
Moody, H. L.
Morse, John
Morse, S. E.
Merrill, Gyles
Nichols, James R.
†Nichols, John A.
Nichols, John B.
*Noyes, James
Noyes, Johnson
†Oberton, W. W. S.
Ordway. Joshua H.
*Patch, Paul D.
*Plummer, Hiram
Porter, Dudley

*Porter, Ebenezer
Putnam, Moses W.
Randall, John P.
Richards, William B.
Richardson, John B.
Ridgway, Joseph N.
*Roberts, Stephen
Robinson, Edwin
Savary, Robert
*Sleeper, Sherburne C.
*Slocum, Rufus
Smiley, James V.
Smith, Jesse
Saunders, A. C.
Saunders, Thomas
Spiller, J. B.
Stewart, John
Swett, Jackson B.
Taylor, Levi
Taylor, Martin
Taylor, Oliver
Titcomb, Benaiah
*Tompkins, Christ'r
Towle, Samuel K.
†Turner, James
Wadleigh, Levi C.
Wales, Herbert E.
*Webster, David
Webster, Ebenezer
Webster, E. F.
*Webster, Nathan
Webster, Richard
†Welch, Ezra B.
West, H. K.
West, James F.
West, Thomas
Wheeler, Allison
White, James D.
Whittier, Alvah
*Whittier, Leonard
Whittier, Warner R.
Winchell, James H.
*Wingate, Moses

IPSWICH.

*Andrews, David
Andrews, Theodore
Appleton, Francis R.
Appleton, B. D.
Appleton, Daniel F.
Baker, S. N., Jr.
Bond, James W.
*Bray, Frederick
Brown, Aaron F.
Brown, John
Brown, Manasseh
Brown, William G.
Caldwell, Abraham
Clark, Erastus
Cogswell, Ebenezer
*Cogswell, William
Conant, Gilbert
*Dodge, Richard T.
Fall, Tristam B.
†Farley, Alfred M.
*Farley, Joseph
†Farley, Robert, Jr.
Fellows, Alonzo B.
Gould, John J.
*Grant, John
Grant, Joshua B.
Green, George H.
Haskell, George
Hobbs, John
Hodgdon, George
Hodgkins, Augustine
Horton, Joseph
Hunt, Samuel
Hurd, Y. G.
Jewett, Israel K.
Jordan, Robert Mrs.
Kimball, Charles
Kimball, Daniel
Kinsman, Joseph F.
Kinsman, William H.
†Locke, Calvin
*Low, Thomas
McFarland, L.
Marshall, Joseph
†Merrill, Ezekiel O.
Mitchell, Frederick
Norwood, C. J.
Perkins, J. E. B.
Perley, David T.
*Potter, Asa T.
Rogers, Isaiah A.
Ross, Joseph
Shatswell, Nathaniel
Smith, Webster
Stone, Augustine
Story, Alden
Tappan, Amos
Treadwell, William
Underhill, J. C.
Wade, Asa
†Wade, William F.
Waite, Abraham D.
Whittier, Maynard
*Worcester, Ira

LAWRENCE.

Ames, M. B.
*Ambrose, Nathaniel
Bodwell, S. B.
Bodwell, Asa M.
†Bryant, Oliver
Cabot, George D.
Currier, Eben B.
Currier, J. Merrill
*Decker, J. M.
Drew, J. D.
Durant, Adolphus
Durant, W. A.
Emery, Levi
Fiske, E. A.
Flynn, Edward
French, A. J.
Gile, W. F.
Gilman, Frederic

Goodwin, John
Harmon, Nathan W.
Herrick, H. G.
Herrick, James D.
Hills, George W.
Hood, Gilbert E.
*Howard, J. B. D.
Hubbard, Leavitt
Holt, Lewis G.
Kimball, Wm. F.
†Kimball, Josiah
†Kimball, Wm. M.
Keleher, W. A.
Lamb, William D.
*Mallard, L. Mrs.
Merrill, George S.
Page, E. F.
Page, Edward
Rollins, John R.
Russell, W. A.
Russell, George W.
Robinson, P. B.
Richardson, E. P.
Saunders, Daniel
*Stevens, William
Shattuck, Charles
Small, Henry
Victor, F. M.
Warren, Albert
*Webster, Charles
Wilder, G. W.
Wright, W. H. P.

LYNN.

*Allen, Jacob A.
Baker, Ezra
Batchelder, John
†Black, James D.
Breed, Andrews
Breed, Henry A.
*Breed, Nehemiah, Jr.
Brown, Ira P.
Chase, Nathan D.
Chamberlain, Wm. D.
†Coggeshall, J. H.
*Collins, Ezra.
Davis, Edward S.
Emery, George E.
Fay, William P.
Graves, Samuel
Harris, N. S.
Hawkes, Nathan M.
*Healy, Mark
Hovey, Rufus P.
*Keene, George W.
Kimball, Rufus
Merrill, Samuel A.
Merrill, E. H.
*Merritt, Charles
Newhall, Hiram L.
Newhall, Asa T.
Norris, George, Jr.
*Nye, James M.
*Osborn, William
†Osborn, William H.
Potter, Edward P.
Putnam, F. W.
Rankin, John D.
Rhoades, Jacob
Roney, Simon J.
*Saunderson, Jos. N.
Shorey, John L.
Shorey, George L.
Spinney, William N.
Sawyer, J. A. J.
Usher, Roland G.
†Wyman, Isaac

LYNNFIELD.

Brown, Joseph
Danforth, John
*Emerson, D. P.
*Emerson, Hubbard
Hawkes, George L.
Herrick, George E.
Mansfield, Andrew
Newhall, Josiah
Perkins, John
†Perkins, John H.
*Richardson, Chas.
Smith, Henry E.
†Smith, Joseph
†Symonds, George W.

MANCHESTER.

Allen, Luther
Allen, Wm. H.
Burnham, Frederick
†Chase, Joseph S.
Cheever, John H.
Cheever, William M.
Fields, James T.
Fitz, William F.
Friend, Daniel W.
*Gentlee, Thomas P.
Hildreth, John D.
Jewett, Alfred W.
Knight, Henry
Knight, John, Jr.
Lee, Allen
Lee, John
Price, John
Rabardy, Julius F.
Smith, A. W.
Sturgis, Russell, Jr.
*Tappan, Benjamin
*Tappan, Ebenezer
Tappan, Israel F.
Tappan, Lewis N.

MARBLEHEAD.

Alley, Amos P.
Alley, James E.
Alley, Reuben
Alley, Franklin
Appleton, Thomas
Childs, Addison
Childs, Caleb
Cloutman, Henry
Dennis, John
Gregory, J. J. H.
Hathaway, Seth W.
Hathaway, Joseph B.
†Millett, Joseph
Nutting, John
Paine, Thomas T.
Robinson, Frederick
*Stone, John
Ware, Benjamin P.
Ware, Horace
Warren, David
†Wyman, Israel
†Wyman, Luke

MERRIMAC.

Currier, J. M.
*Evans, John
Goodwin, A. E.
*Gunnison, William
Haskell, Wm. H.
Loud, C. H.
Nichols, Chas. H.
Patten, T. B.
Sargent, J. B.
*Sargent, Orlando
Sargent, Patten
Sargent, P. Willis
Sawyer, Thomas C.
Tewksbury, D. M.

METHUEN.

*Barker, J. B.
*Barker, Stephen
Bradley, Leverett
Bradley, Frank J.
Buswell, Jos. E.
Butters, W. H.
Butters, George W.
Currier, Daniel
*Davis, John
*Dow, Lorenzo
Dow, Virgil
Emerson, Jacob, Jr.
Frederic, John W.
Gage, George W.
Gutterson, B. J.
Goss, Charles E
Herrick, Fred S. C.
Hicok, S. S.
*How, Christopher
How, Joseph
How, Joseph S.
Ingalls, Charles
*Ingalls, Joseph F.
*Low, John
Morrison, D. T.
Morse, Jonathan
Nevins, David
Noyes, David W.
Patterson, D. H.
Phippen, G. S.
*Rollins, Amos C.
*Russ, John
Sargent, S. C.
Sleeper, William C.
Thurlow, J. E.
Tozier, C. L.
†Welch, John

MIDDLETON.

Berry, Jonathan
Berry, William
Currier, George A.
Flint, James
Hutchinson, J. A.
Noyes, A. P.
Phelps, William A.
Stiles, David
Stiles, Farnham
Stiles, Farnham, Mrs.
Stiles, Hiram A.
Wellman, John R.
Winslow, Henry B.

NAHANT.

Goodale, Byron

NEWBURY.

Adams, Charles
Adams, Charles W.
*Adams, John C.
*Adams, John J.
Allen, John W.
Bray, Richard S.
Bray, George W.
Boynton, Charles
Caldwell, David S.

Colman, Moses
Goodrich, Wm. F.
Howard, Horatio M.
Illsley, Paul M.
Jaques, Richard
Jaques, Richard T.
Jaques, William
Kent, John N.
Kent, Joshua N.
Knight, Joseph
Kent, Otis L.
Kent, Edward
Kent, Albert S.
Langley, William C.
Little, E. C.
Little, E. F.
*Little, Edward H.
Little, Joseph
Little, Nathaniel
*Little, Silas
Little, Stephen W.
*Little, Tristram
Little, William
Longfellow, H. F.
Longfellow, J.
Longfellow, J. Mrs.
Lucy, Gideon R.
Lunt, Charles M.
Lunt, J. Austin
*Lunt, Joseph
Moody, N. W.
Mann, Otis
Newman, Sidney F.
Noyes, James
Noyes, Luther
Noyes, Moses K.
Perkins, Charles L.
Perkins, W. W.
Plummer, Daniel, Jr.
Plummer, G. H.
*Plummer, Greenleaf
†Poole, B. P. Mrs.
Randall, G. A
Rogers, Abial
Rolfe, Joseph N.
Tenney, H. L
Tenny, Daniel
Thurlow, William
Woods, C. W.

NEWBURYPORT.

Adams, Paul D.
Adams, J. Quincy
Adams, Rufus
*Akerman, John
Akerman, Joseph
Ashby, William
Balch, John H.
Ballou, C N.
Bartlett, T. K.
Batchelder, Daniel C.
Battell, Elbridge
Boardman, Isaac H.
Brewster, William H.
Bricher, William
*Brown, David F.
Canney, Hiram
Capers, Thomas
Coffin, Frederic J.
Colby, George J. L.
Colby, George W.
*Colman, Daniel T.
Colman, James C,
Colman, William T.
Currier, Warren
*Cushing, Caleb
Cutter, Eben P.
*Davis, Benjamin
Delano, Otis
Dyer, J. R.
*French, Curtis
Gale, Stephen M.
George, George
Griffin, Eliphalet
*Hale, Isaac, Jr.
Hale, Joshua
*Hale, Josiah L.
Hamlet, Daniel
Hart, James S.
*Horton, Daniel
Huff, William
Huse, William H.
Ireland, Charles H.
Jackman, George W.
*Johnson William P.
Jones, William
†Kelley, E. G.
Little, John G.
*Little, Moses S.
Lunt, Charles
*Lunt, Micajah
*Marston, Stephen W.
Merrill, Enoch
Merrill, Samuel, Jr.
Morrison, Daniel T.
Morse, James M.
Morss, Joseph B.
Moseley, Edward A.
Moseley, Edward S.
Moulton, Henry W.
Moulton, Joseph
Newhall, Asa T.
*Newhall, Joshua L.
Northend, E. T.
Noyes, William, Jr.
Ordway, Parsons
*Page, John T.
Pearson, J. P.
Perley, R M.
*Pettingell, Moses
Plummer, Moses A.
Plummer, Wm. C.
*Remick, John E.
*Robinson, J. D.
Shoof, Henry
Smith, David
Smith, Edmund
Smith, Joseph B.
Smith, Eunice L.
Smith, Robert A.
Stanley, B. F.
Stanley, J. C.
†Stearns, Edwin
*Stone, Jacob
Sumner, John

Tappan, Samuel B.
Tilton, Enoch
Tozer, Hiram
Titcomb, Paul
Toppan, Edward S.
*Williams, Robert
Winkley, J. Otis
Winkley, Paul T.
Wood, David
Winkley, Paul T., Jr.
Young, Hiram

NORTH ANDOVER.

†Appleton, S. F.
Bailey, Charles P.
*Berry, Jacob
Berry, Albert
Blake, J. P.
Butterfield, Chas. A.
Carlton, Daniel
Carlton, Joseph
Carlton, Daniel A.
Crosby, Josiah
Chever, William J.
Davis, George G.
Davis, George E.
Davis, George L.
Dale, William J.
Dale, William J. Jr.
Farnham, B. H.
Farnham, Jacob
Farnham, J. L.
Foster, J. Frank
Foster, John P.
†Foster, J. Prescott
Foster, William
†Foster, Samuel
Foster, Orrin
*French, George
French, J. D. W.
Fuller, Abijah P.
*Gage, John C.
Goodhue, Hiram P.
†Green, Arthur M.
Gardner, D. F.
Greene, E. W.
Goodwin, John O.
Hill, Samuel B.
†Jaquith, Chris'r P.
Jenkins, Benjamin F.
Jenkins, Milon S.
Johnson, Theron
Johnson, James T.
Johnson, Charles F.
*Kittredge, Joseph
Loring, George B. Jr.
Manning, John
Montgomery, Jas. A.
Nason, James
Osgood, Isaac F.
Peters, Nathaniel
Peters, William
Phelps, W. W.
Phelps, H. L.
Poor, James
*Poore, Matthew
Reynolds, James H.
Reynolds, Wm. B.
†Slade, Jarvis
*Spaulding, Amos
Stevens, Moses T.
*Shattuck, Thomas C.
Sutton, Eben
Symonds, Frederick
†Wardwell, Orin
*Weed, Dan
Wilson, Abiel
Wiel, Louis
Wardwell, T. O.
Wiley, John A.

PEABODY.

Abbott, Alfred A.
Allen, Lewis
Appleton, Francis H.
*Ayer, Hazen
Bancroft, Sidney C.
Barrett, E. P.
Buxton, Henry V.
Blake, Walter F.
Brown, W. H.
*Basford, P. R.
Batchelder, Mal'hi F.
Blaney, Stephen
Bodge, Horatio
Buxton, Daniel, Jr.
Buxton, Joshua
Buxton, Robert G.
*Clement, John B.
Colcord, J. L.
*Cook, Henry
Curtis, Andrew
*Davis, Mark
Dole, Wm. F.
Emerton, C. F.
Fairfield, Joseph
Foster, Ira
Gardner, Henry
Goodale, Jacob O.
Goodale, J. P.
†Gunnison, Elisha
Hardy, Isaac
Hills, Benjamin M.
†Hoyt, Joseph
*Hubbard, John L.
Huntington, Benj.
Hutchinson, Samuel
Hutchinson, C. K.
Jacobs, Edward W
*King, Amos
*King, Eben
*King, Henry A.
King, J. Augustus
King, James P.
King, Jonathan
King, Perley
Linehan, John
Little, William H.
†Low, Caleb
Marsh, Fred

Marsh, Frank
Marsh, James
*Marsh, John
*Marsh, Philip
*Merrill, Wingate
Messer, F. B.
Needham, George A.
Needham, Joseph S.
Newhall, Orlando F.
Osborn, Philip L.
Osborne, Abraham C.
Osborne, David
*Osborne, Kendall
*Osgood, Joseph
Pepper, George W.
*Peirson, A. L.
*Poole, Fitch
*Poor, Eben S.
*Poor, Henry
†Potter, William
*Preston, Moses
Proctor, Abel
*Proctor, John W.
*Proctor, Thorndike
Richardson, W. B.
Saltonstall, Henry
*Sanger, Abner
*Sawyer, Asa
*Shaekley, Moses A.
Southwick, Sumner
Stevens, John V.
Sutton, William
Sweet, Samuel
Taylor, George W.
Thomas, Josiah B.
*Upton, Eben S.
Upton, Stephen
Viles, Bowman
Walcott, John G.
Wallis, David B.
Walton, George D.
Ward, Winsor M.
*Wheeler, Benjamin
Wheeler, Benjamin S.

ROCKPORT.

Blatchford, Eben
Estes, Alden C.
*Haskell, Benjamin
Hodgkins, John B.
Lane, Andrew
Lowe, Mrs. Martha J.
Lowe, William
Manning, James
Manning, John J.
Manning, William N.
Marshall, John W.
Mills, Richard P.
Patch, William H.
*Pool, Ebenezer
*Row, Ebenezer
*Rowe, Jabez
Smith, Allen
Smith, Allen Jr.
Smith, Beman C.
*Smith, David

ROWLEY.

Blodgette, George B.
Cressy, John S.
Dole, Charles
Dummer, Nath'l N.
Foss, Joshua
Hale, Clara A.
*Hale, Daniel J.
Hale, Joseph
Hale, Thomas
Lambert, Mary G.
Mighill, Charles P.
Nelson, David O. Jr.
*Payson, Moses P.
Pike, John
Prime, Daniel B.
Potter, Edward H.
*Proctor, George
Smith, George J.
Titcomb, Albert
Todd, Daniel G.
Todd, John F.

SALEM.

Andrews, Randal
Andrews, Samuel P.
Almy, James F.
Abbott, Nathaniel
Barton, Gardner
*Barton, William C.
*Bowdoin, Willard L.
Brookhouse, Robert
Beckford, C. H.
Chamberlain, James
*Chase, Stephen A.
Curwen, Samuel H.
Clark, Charles S.
Chase, William
Collins, William
*Cressy, Josiah P.
Cross, John D.
Daland, John
Endicott, William C.
Endicott, William P.
Felt, John
Fellows, Israel
Fiske, Joseph E.
Foote, Caleb
Foster, Joseph C.
Foster, William H.
Foster, William J.

Goodhue, William P.
Gray, Benjamin A.
Gibney, George H.
Gibney, John
*Gardner, D. B.
Hathaway, John
*Huntington, Asahel
Hale, Henry,
Hale, Henry A.
Hale, Joseph S.
Horton, N. A.
Ives, John M.
Ives, John S.
*Ives, William
Jones, Samuel G.
Jackson, Eben
Kimball, James
Kinsman, John
Kemble, Arthur
*Lee, John C.
Lord, William
Loring, George B.
Lander, Wm. A.
Mack, William
*Maloon, William
Manning, Robert
Merritt, David
Messervey, Wm. S.
*Metcalf, Benjamin G.
*Milton, T. Payson
Morse, Ebenezer H.
Newhall, Benjamin S.
Newcomb, Caleb
†Nichols, George, Jr.
Northend, William D.
Noyes, E. K.
Oliver, H. K.
Oliver, Samuel C.
*O'Shea, M.
Peabody, John P.
*Peirson, Edward B.
Perkins, E. R.
*Perkins, J. C.
Phillips, Willard P.
Phippen, George D.
Pickering, John
Potter, Daniel
*Proctor, William
Pulsifer, Joseph
Pettingill, L. D.
Pettingill, S. J.
Pickering, Wm. Jr.
Pickering, Benjamin
Page, John G.
*Roberts, William
†Robinson, J. A.
Rogers, A D.
Rogers, George W.
*Rogers, Richard S.
*Russell, John L.
*Reynolds, Moses C.
Reynolds, Henry E.
Ropes, John C.
Saunders, Robert J.
Saunders, William
Smith, Andrew
*Smith, Caleb
Shreve, O. B.
Stimpson, James C.
Story, Augustus
Stowe, Volney C.
Streeter, Gilbert L.
Ware, Horace
Ware, Horace C.
Wentzell, David
Wheatland, Henry
Winkley, Enoch
†Wyman, Rufus
White, Frank
Waters, David P.

SALISBURY.

*Ayer, James H. B.
*Clark, Thomas J.
Cole, Augustus K.
*Currier, Jacob
Currier, W. H. B.
Evans, Benjamin
*French, Moses
*Gale, Josiah B.
Pendergast, J. F.
Pray, Rufus

SAUGUS.

Hatch, Anthony
Houghton, T. O. W.
Hawkes, Samuel
Newhall, Herbert B.
Newhall, Joseph
Noble, William
Penuey, George H.
Robinson, E. P.
*Sweetser, George H.
Whitehead, Joseph

SWAMPSCOTT.

Crosman, S. F.
Holden, Philander
Mudge, E. R.
Palmer, John P.
Phillips, J. B.
*Pitman, Samuel C.
Rowe, Allen
Stetson, Charles A.
Washburn, John

TOPSFIELD.

*Adams, B. P.
*Balch, Abraham
Batchelder, Ezra
Billings, Augustus T.
Bradstreet Dudley
Clark, David
*Cleveland, John
*Elliott, Israel D.
*Emerson, T. M. P.
Gould, Ariel H.
Herrick, Charles
Hood, S. D.
*Hubbard, William
Lamson, J. Arthur
Leach, Thomas K.
Manning, James
*Munday, William
*Merriam, Sidney A.
Merriam, Arthur M.
Peabody, Charles J.
Perkins, Moses B.
Pierce, T. W.
Poole, Benjamin
*Rea, John Jr.
Ward, Richard
Wildes, Moses
Wilson, James
Woodbury, Isaac M.

WENHAM.

Alley, Henry
*Batcheler, Joseph
Bodge, Richard F.
Cole, Zachariah
*Dodge, Andrew
*Dodge, Ezra
Dodge, George A.
Dodge, George F.
*Dodge, Rufus A.
Dodge, William P.
Edwards, Francis R.
Fiske, Alfred R.
Gould, Amos
*Hadley, Franklin
Hobbs, A. F.
Hobbs, Henry
Kavanagh, J.
Morgan, William B.
Peabody, George W.
Parsons, George W.
Patch, Henry
Pingree, Wm. G.
*Porter, William
Perkins, Nathaniel P.
Robinson, John L.
Taylor, Geo H.
Tilton, George H.
Waters, Robert H.

WEST NEWBURY.

Bailey, William P.
Bradley, C. S.
*Bailey, Uriah
Boynton, Eben M.
Brown, Hayden
*Brown Osgood
Brown, Robert L.
Carr, George W.
Carr, James
*Carr, Moses
Carr, Samuel
Chase, Samuel S.
Follansbee, B. A.
Flook, Geo. L.
Goodridge, David L.
Goodridge, H. M.
Goodridge, Joseph
*Goodwin, Thos. C.
Gordon, Joseph Z.
Gowen, Oscar
Gowen, Ezekiel
*Griffin, B. F. S.
Hosam, George
Jacques, Romulus
Little, Edmund
Little, Otis
Merrill, Elbridge
Merrill, William
Merrill, William E
Merrill, M. B.
*Moody, Samuel, Jr.
Moore, Alfred L.
*Mosely, Charles C.
Moulton, Daniel
Nelson, Daniel P.
Newell, Joseph
Newell, Richard
*Noyes, Anson W.
Noyes, Stephen E.
Ordway, Cyrus K.
*Ordway, George N.
Ordway, Cyrus D.
Ordway, Thomas G.
Ordway, Hanson
Ordway, Chas. W.
*Pillsbury, Daniel
Poor, Moses H.
Poore, Amos
Poore, Ben: Perley
Poore, George H.
Ridgway, M. Moses
Ridgway, M. M., Jr.
Rogers, Calvin
*Rogers, Charles
Rogers, George C.
Rogers, Hiram
Ridgway, Sarah L.
Smith, Amos
Smith, David
Smith, James
Smith, Moses
Stanwood, Moses P.
Thurlow, George
Thurlow, Stephen C.
Thurlow, Thomas C.
Titcomb, Silas M.

NON-RESIDENTS.

Balch, William H., Malden ;
Balch, Eustis, California ;
Bodwell, Henry A., Keene, N.H. ;
Blunt, Milton J., Springfield, Ms. ;
Bodwell, Jos R., Hallowell, Me. ;
Brackett, H. Clark, Virginia ;
Brocklebank, S., Rumney, N. H. ;
Burnham, Choate, Boston ;
Clark, Joseph F., Boston ;
Currier, Wm. A., Boston ;
Chapin, W. C., Providence, R.I. ;
*Cleaveland, N., Jersey City, N.J ;
Cleaveland, H. W. S , Chicago ;
Colby, Chas. A., New York ;
Chase, Jos. S., Malden ;
Carey, James, Quincy ;
Caldwell, L., Jacksonville, Fla. ;
Carey, James, New York ;
Dole, Francis F., Chicopee ;
Dodge, John S., Chicopee ;
Eaton, Thomas, Harristown, Ill. ;
Felton, Wm. H., Marlboro, Ms. ;
Flint, Chas. L., Boston ;
Fowler, W. W , Plymouth ;
Fernald, Henry B , Washington ;
Farrar, Joseph E., Boston ;
Foster, James B., Melrose ;
Flagg, Wilson, Cambridge, Mass. ;
*Flint, Thomas, Boston ;
Flint, Horace P., Boston ;
French, Chas., Davenport, O. ;
French, Geo. H., Davenport, O. ;
Gannett, W. W., Boston ;
Green, John A., New York ;
Hadley, William, Boston ;
Hayes, J. F. C., Iowa ;
Hill, Moses, Revere ;
Hill, Mark F., Derry, N. H. ;
Holt, Jos. S., New York City ;
Hubbard, J. G., Hampstead, N.H ;
Hutchinson, C. H., Rhinebeck ;
Juul, Conrad, Minnesota ;
Kimball, Jonathan, Boston ;
King, D. Webster, Boston ;
Knight, J. M., Maine ;
Knight, S. Leverett, Clinton, Ia. ;
Lyford, Geo. H., New York ;
Lake, Chas. H., Churchill, Md ;
Low, Sidney, Groton ;
Maynard, Lambert, Boston ;
Merrill, Hayden A., Dedham ;
Norwood, Gorham, Gorham, Me. ;
Nichols, Albert, Chicago ;
Nichols, D. P., Boston ;
Ordway, G. W., Manchester ;
Oliver, John E., Lynn ;
*Parker, James M., Boston ;
Putnam, Benj. C., Chelsea ;
Pierce, Wm., Charlestown, Mass. ;
*Payson, T. E., Providence. R.I. ;
Page, Adino, Metamora, Ill. ;
*Porter, Wm. F., Cambridge ;
Poor, Henry, New York City ;
Payson, Samuel F , New York ;
Patch, Ash'l H., Clarkville, Tenn. ;
Putnam, Wm. R,, Red Wing, M. ;
Phillips, Samuel, Brighton ;
Phillips, A. P., Medfield ;
Quimby, T. W., Washington, Mo. ;
Rogers, William, Illinois ;
Rogers, Benjamin, Malden ;
Stone, Edwin M., Providence, R.I ;
Snow, Jesse W., Boston ;
Sargent, G. P., Philadelphia ;
Stanley, Sam'l S., Charlestown ;
Shattuck, L P., Boston ;
Spofford, Farnham, Washington ;
Titcomb, Chas A., Boston ;
Whittemore, Chas. A., Boston ;
Ware, Darwin E., Boston ;
Whittemore, J. R., Chicopee ;
Wheeler, H. T., Worcester ;
Webb, Michael, Jr., Cambridge ;
Walker, Dexter M., Boston.

AMENDMENT TO THE CONSTITUTION.

ADOPTED SEPT. 25th, 1877.

ARTICLE 1ST.—The President, Vice Presidents, and Secretary, of the Society, shall be elected at the annual meeting by ballot.

ARTICLE 2D.—The Trustees shall be elected annually, one for each town in the County, and the Trustee for each town shall be elected by the members of the Society in said town, at a meeting called for that purpose, in accordance with notice issued by the Secretary; and such election shall be final, and shall constitute the Trustee so elected a member of the Board of Trustees of the Society; and the result of the election in each town shall be communicated as early as possible to the Secretary.

CONTENTS.

Address of T. C. Thurlow. 3
Cattle Show and Fair. 17
Report on Fat Cattle. 23
Bulls 23
Milch Cows. 24
Herd of Milch Cows. 28
Heifers. 31
Working Oxen and Steers. 32
Town Teams. 33
Steers. 33
Stallions. 35
Brood Mares. 35
Family Horses 36
Farm and Draft Horses. 38
Pairs of Draft Horses. 38
Colts. 39
Swine. 39
Sheep 40
Poultry 40
Ploughing—Double Teams. 43
Ploughing—Single Teams. 43
Ploughing—with Horses. 44
Ploughing—three or more Horses. 44
Ploughing with Swivel Plough. 46
Agricultural Implements. 47
Carriages. 49
Dairy 49
Bread and Honey. 52
Pears 52
Apples 90
Peaches, Grapes and Assorted Fruits. 92
Flowers. 95
Vegetables. 98

Report on Counterpanes and Rugs.....100
Articles manufactured from Leather.....100
Manufactures and General Merchandise.....101
Fancy Works and Works of Art.....101
Children's Work.....103
Farms.....103
Grain Crops.....104
Root Crops.....110
New Variety of Winter Apples.....114
Indian Corn.....115
Treadwell Farm.....117
Manures.....117
Esssay by James J. H. Gregory.....126
Essays and Reports of Committees.....131
Treasurer's Report.....132
Officers of the Society.....134
New Members.....135
List of Premiums.....136
List of Members.....143
Amendment to the Constitution.....158

TRANSACTIONS

OF THE

Essex Agricultural Society,

IN MASSACHUSETTS.

FOR THE YEAR 1879.

WITH THE

FIFTY-SEVENTH

ANNUAL ADDRESS,

— BY —

HON. GEO. B. LORING,

OF SALEM.

PUBLISHED BY ORDER OF THE SOCIETY.

SALEM:

OBSERVER STEAM PRINTING ESTABLISHMENT.

1879.

ADDRESS.

Gentlemen of the Society:

I should be doing injustice to my own feelings did I fail to acknowledge the compliment contained in your invitation to address you, now for the third time, at your annual exhibition. The custom which has prevailed here, since the foundation of your society, has confined the choice of the annual speaker to the citizens of Essex county, and has secured for you a series of addresses upon almost every question connected with practical farming as conducted in your own community. The addresses delivered on these occasions, numbering now nearly sixty, contain much of the thought and speculation which have occupied the minds of our farmers during the last half century, and they constitute a body of agricultural literature of the highest value to all who are ready to be guided by suggestions drawn from experiences in conducting the affairs of the farm. To the advice and encouragement to be found in these annual papers I am happy to contribute my share, with diffidence with regard to my own capacity to follow, even with unequal steps, such teachers as Pickering, Newell and Colman of the generation that is gone, and such practical guides as have addressed you in our own day.

I shall not, on this occasion, endeavor to pursue the path which has been laid down by the practical farmers who have

preceded me, by entering upon a disquisition upon the best modes of farming; the best crops to raise, and how to raise them; the best cattle to keep, and how to keep them. I think it is well to recognize the fact that the farmers of Essex county know something about their business already, and that the manner in which prosperous agriculture has been thus far conducted by themselves and their fathers indicates a degree of knowledge which is entitled to respect and consideration. I do not recognize the necessity of teaching a farmer who has been successful with his dairy, and has known a good cow from a bad one, the best cattle for his farm. I have no desire to prove to the prosperous growers of vegetables here that they ought to turn their attention to raising corn, in this latitude of short and doubtful seasons; and that they can raise it for thirty cents a bushel, regardless of the value of the land on which it is raised, the cost of manure used in raising, and the expense of the labor employed in managing the land and the crop. I should be very reluctant to impress upon the practical farmers of this county, who have learned by their own experience and that of their fathers, that herdgrass, red-top and clover are the three staple grasses for conversion into hay; the best for feeding; the best for protecting each other; the best for curing into the most nutritious and marketable hay—I should be very reluctant, I say, to impress upon them that they had better abandon these well-known and well-proved varieties, and resort to unknown and untried varieties, not one of which has yet been adopted as a foundation for the hay crop.

I should hesitate about endeavoring to prove to you that a clover crop is a better fertilizer than barnyard manure, on which you have been in the habit of relying. I have no desire to tell the farmers of this county, who have been all their lives

engaged in cutting and curing hay, how to harvest this important crop, when I meet, daily, loads of their hay bound to a neighboring market, whose fragrance charms the traveller on our highways, and whose quality stands approved, both by judicious purchasers and hungry animals. Why should I try to teach you the best time to sow grass seed, and to plant potatoes, and sow your grain, and harvest your mangolds and swedes, and the best way to apply manure, when your own experience has taught you all this, long ago? Questions like these I am willing to refer to an intelligent body of farmers, who have generally exercised good judgment in the management of their business; and to realize that they already know that plan of farming best suited to the land they cultivate. I am aware that the farmer cannot afford to devote season after season to trying experiments suggested by some restless theorist, or by some ambitious teacher, who thinks all change is progress, and that no law can be learned by practice, and who feels that he must say something to earn his salary. I am also aware that a well-devised, definite, prosperous plan is of the highest importance to him who proposes to live by tilling the soil; and I have noticed that he who simplifies this plan most readily and pursues it most steadily, undiverted by promises and unconfused by theories, never captivated and misled by the idea that there is a short and easy road to successful farming, more than there is to great learning, is the one who arrives at the prosperity we all desire. I am quite unwilling to discuss practical questions merely for the sake of discussion—knowing well that while I stand still to debate, the weeds will grow apace.

And so referring the anxious student of agriculture to the successful corn-growers, and grass-growers, and grain-growers,

and root-growers, and fruit-growers, and dairy-managers, and cattle-feeders, for information upon the various topics in which each one has manifested skill, and warning him that they who talk the most oftentimes produce the least, I leave you to the knowledge which the best of you have acquired by practice, and call your attention to a matter of fundamental importance to you all—a question upon the solution of which in a satisfactory manner depends the very existence of agriculture as an industry to be cherished and developed by a free, enlightened, educated and ambitious people.

We are told that the great mass of mankind live by tilling the soil, in every civilized country on earth ; but while this fact is constantly impressed upon our minds, we are not so definitely informed with regard to the manner in which they live, their social condition, their civil relations, their domestic economy. The condition of those employed in manufactures and the mechanic arts varies, we are aware, as the plan in which they are organized in various countries varies—prosperity, thrift, intelligence being secured to some, poverty and ignorance being visited on others. And judging by the various conditions of associated man in the many countries in which society is organized, we can infer that the agricultural population of one country differs from the agricultural population of another, as their domestic conditions, their modes of education, their social and civil obligations differ. The tenant-farmers of Great Britain, the peasantry of Russia, the farmers of Germany, the small land-holders of France, the agricultural citizens of the United States, all represent one industry—and yet how widely they differ in everything which goes to make up man's condition as an intelligent being and as a member of some form of state and society! So true and striking is this that I am

sometimes inclined to think that the moral, intellectual and social conditions of the agricultural population of a country is more indicative of its real civilization and of its advancement in all the arts and cultivation of life than are its churches and school-houses—its systems of education and religion.

The great question now occupying the minds of those interested in the welfare of civilized man as a member of society is how can the comfort, prosperity and intelligence of the agricultural population be best subserved and promoted. England discusses the welfare of the tenant-farmer; Russia considers the condition of the recently emancipated serf; France is interested in the prosperity of an unambitious, industrious, frugal body of small land-holders and cultivators. The American goes further, and inquires—How can an American farmer, occupying a farm of usual dimensions here, discharge his duty to the State as a voter and tax-payer, and gratify his desires with regard to the education of his family, the comfort and culture of his home, and the informing of his own mind and the gratification of his tastes, from the income which he can derive from the cultivation of the land? And this is the American problem of to-day.

That the prosperity of agriculture has kept pace with the increasing prosperity of every other industry in our land is manifest. The activity of the grain-growing sections of our country has been great for more reasons than one; and the demand for the products of the pasture and the stall has been most encouraging to those who supply the provision market at home and abroad. It may be that this encouragement of local and special crops has not been as great, and that the farmer is called upon to consider how he can secure a suitable reward for the labor which he applies to the careful and system-

atic tillage of the soil to supply local markets with what they require, and for the care which he bestows on the orchard and dairy. And yet I think personal effort is well rewarded, and that the small farmer in favored localities will find, even from slow and reduced markets, a compensation nearly as great as he obtained when his personal expenses were greater, and the wages of labor much larger than they now are. I am aware that great discouragement has fallen upon this class of farmers in whose hands rests that system of agriculture which must prevail as our country increases in population. And yet, the condition of the farmer here is looked upon as so satisfactory in every point of view, that the lesson taught by us is engaging the minds of some of the most thoughtful statesmen and publicists of the Old World. It has been discovered that the American system of land-holding, for instance, is the foundation of great popular content, and accompanied as it is by great social and civil opportunities, surrounded as it is by the free institutions of our land, attended as it is by the school-house and the meeting-house, and by the constant call to public service, which leaves but few exempt among us, it constitutes the foundation on which rest great mental activity, great dignity of character, great enterprise and ambition. To the practical work of the agricultural community here, wide-spread disaster, moreover, is almost unknown. The local damage of a drouth or a flood is not, indeed, unusual, but the extent of our territory is such, the diversities of our soil and climate are so great, the disasters seem to be circumscribed and accidental, while the prosperity is wide-spread and constant. With landed possessions which are obliged to bear the burdens of heavy taxation, with the wages of labor vastly greater than in any of the countries of Europe, with the personal requirements of the

farmer and his family increased by social obligations and the natural demands of a free and responsible people, we have been able to compete in the grain market of the world with those who, in some instances, are furnished with land free of rent and taxation, and whose necessities of life are so small, and whose duties are so low, that the former seem intolerable and the latter seem insignificant and trivial. The skill of the American farmer, supplied as he is, with the most ingenious and graceful and effective machinery, has become an object of admiration and imitation. The well-organized home of the American farmer is looked upon as a model. The place filled in the community by the American farmer is considered so important and honorable that other nations inquire how it has been attained. The crops of the American farmer are looked upon as so sure that all anxiety with regard to the supply of food for people less favored has passed away. Besides feeding nearly fifty millions of people, the agriculture of our country has supplied our commerce with a large proportion of our exports to foreign countries. Of the aggregate amount of our exports for eleven months, ending May 31, 1879, valued at $635,042,078—the agricultural industry furnished about $532,813,179. The value of the cattle exported during that period was $2,897,846; of corn, $43,610,441; of wheat, $90,700,598; of flour, $23,000,854; of cotton, $173,629,022; of beef, $7,120,000; of cheese, $11,737,928; of lard, $28,068,490; of pork, $4,620,000; of grass seed, $2,000,000; of tobacco, $23,440,000.

The effect of this contribution to our export trade is incalculable; and it has done so much toward restoring us to that financial stability and prosperity and honor of which as a people we ought to be proud, and for which every prosperous

man ought to be grateful, that I turn with individual pride and satisfaction to the record which American agriculture has made for itself during the last year. This unusual and extraordinary prosperity is due undoubtedly to many causes, both natural and artificial; the natural causes being our diversity of soil and climate, the variety of our crops, and the economy with which new and fertile lands can be cultivated; the artificial causes being the advantages of local and general markets, and the relations established between the farmer and the soil he cultivates by the independent ownership of land under the laws of our country. To this last cause I attribute much of that elasticity and energy which the American farmers manifest in occupying new lands, and in the cultivation of crops adapted to the markets they can reach. It was not easy to tell the strength and stimulus which come through the ownership of the soil to him who occupies it, has fixed his home upon it, and looks to it for his means of subsistence. It is to the division and subdivision of the land, almost as much as to their devotion to the institutions of learning and religion, and their determination to secure all social and civil rights, that our fathers owe their success in establishing free government on this continent. They had the Anglo-Saxon love of land, but above all this they had the Anglo-Saxon love of individual independence; and landed monopolies, entail and primogeniture were especially odious to them. They established, in the earliest colonial days, a system of landholding so simple, so exact, so easily managed that it has become the example which all republican governments follow. They established a public registry of deeds, and provided for an easy and recorded transfer of landed estates from hand to hand, as easy as the transfer of personal property. The state

which they founded became not only the home of civil and religious freedom, but of small-landed proprietors also. When they struck for freedom, they struck for the sacred rights of their own homes, which had become scattered throughout the length and breadth of the land, and were the nurseries of a hardy, independent, sturdy race of Puritans in religion and Round-heads in politics. They were indeed the lords of the soil, and were as unconquerable in their defense of their little farms as the great landed proprietors of their old home were in protecting their immense estates from invasion or popular revolution. The feudal tenure of England really never gained a foot-hold here. But the commercial tenure which took its place gave every prosperous member of the community an opportunity to establish his own little kingdom, and to dispose of or exchange it at his pleasure. The temptation to secure land under these circumstances became irresistible. The mechanic labored to secure his homestead—the merchant was never satisfied until he had purchased a farm with the surplus profits of his commercial adventure. The professional men of the day—the lawyer, the clergyman, the physician—all owned and cultivated their land, which they were proud to occupy. And with this American system, as it has been called, went a multitude of civil rights and privileges and opportunities which were never lost sight of by those who made up and supported and organized the community. The occupants and owners of these farms were the pillars of the church ; they filled the town offices ; they took their places in the legislature and made laws for the Commonwealth ; they took part in the town meeting with its stormy debate and its free ballot; they aspired to high office and exercised the right of beating and being beaten at the polls. The school-house, the library, the

lecture-room, they erected for their mental culture, the church for their moral and religious elevation. They founded a system of state and society here which required of them and requires of us, also, a liberal expenditure both for public and private necessities and luxuries. In a community founded as they founded theirs, taxes must necessarily be somewhat heavy; personal expenses must be somewhat large; the adornments of home must be provided for; the public entertainments will be enjoyed; the children must be well clad, provided with books, and supplied with a good education. And this is the American system of land-holding, with all its duties, privileges and opportunities—a system which the statesmen of the Old World study with profound interest and great care. It may be attended by a great deal of careless and unprofitable and unskilful farming, as every other system is, but it produces great results, and is the foundation of great public and private prosperity.

Our attention is often called to an analogous system of land-holding established in France by the Code Napoleon more than three-quarters of a century ago. But engrafted as this system has been on a people unused to it and ignorant of its effect upon the political economy of the State, it has not secured those popular advantages which, in our own country, led the eminent French philosopher, De Tocqueville, to attribute to it the stability and vital force of our institutions—a lesson learned here and not in France. In accurate and economical farming we may perhaps learn a lesson from France. In her area of 207,480 square miles, not larger than the largest State in the Union, her wheat crop is equal to our own. Her production of local and staple crops is enormous. Her cattle and horses almost reach our number, and her sheep

outnumber ours. With a thrifty population, among whom wealth is quite generally diffused, her resources in war and in peace are unbounded; and her national vitality is the admiration of the civilized world.

That much of this agricultural prosperity is due to the fact that the people devote their energies to the cultivation of small farms there can be no doubt. But it should be remembered that the state of society which goes with this system in France differs so entirely from our own that she furnishes no such example of popular intelligence and personal independence as is found in the United States. There the home known to the American farmer is not found. The American farm-house is almost unknown. The peasantry gather for the night into crowded towns away from their lands, and go forth by day to till their few outlying acres. The demands of the state upon them are not large. They are seldom overtaxed except in time of war. They are tempted by none of the honors and emoluments of public service. They aspire to no civil distinction, and even while organized as a republic, they are warmed into no personal ambition, and as a social organization furnish no example which their own philosopher and publicist could commend as a guide to the civilized world. It is true they are citizens of a republic and are owners of the soil on which they live; but it is a republic without the tradition of freedom, a soil divided among them by violence before they had reached the point of citizenship. And I think the most that can be said of their civil organization is, that their approach to republican government has been largely through their system of land-holding—more largely than through any lesson taught them by their social and political reformers.

But it is in England that this question of land-holding is

most earnestly and carefully discussed at the present day, and it is there that its solution involves the most momentous consequences. The feudal tenure still prevails so generally in the United Kingdom that the integrity of the government seems to depend largely upon its preservation. The inheritance of large landed estates, the protection of those estates by entail and primogeniture, their preservation by every support which the law can throw about them, are all objects which the Englishman has deeply at heart—feeling as he does that upon the power of a nobility based upon such possessions depend the safety and power of the throne. Great as her commerce and manufactures are, and powerful, she knows that the tie which binds those engaged in these great industries to the government which protects them is but feeble when compared with the devotion of a great class who cling to their lands and their homesteads, and enjoy the sense of superiority which fills the breast of him who, under the constitution and the laws, is counted one of the lords of the soil. It is upon land-holding of this description that the liberals of England now make war —upon a system which, to their minds, stands opposed to every popular right and privilege for which they contend.

More than ten years ago, John Bright predicted to an audience in Manchester that the time was rapidly coming when the "American system of land-holding" would be adopted by a reformed British government. Mr. Gladstone presented this system to the minds of the Irish people as the next step in his endeavor to regenerate that island, after the disestablishment of the English church there. The clamor of the most violent and radical of the liberal leaders has been for reform in the direction of a proper distribution of the land among the people. In parliament, at the hustings, at agricultural meetings

like this which we are holding here, the debate is going on, and the question may be said to be the one which divides the popular mind more distinctly than all others, and more constantly occupies the thoughts of the leaders of public thought and the guides of public affairs.

In reply to the opinions expressed by Mr. Gladstone and his associates, Lord Derby long ago attempted to show by figures that the distribution of land among the people of the United Kingdom was as liberal as that to be found anywhere on the face of the earth. More recently, however, Lord Hartington has taken up the question, and has most earnestly pointed out the dangers which lie in the way of continuing a system which, according to him, "exists in no other country in the world." As the leader of the opposition in the House of Commons, and as one who "not only from his character and high position," but "from the social post which he occupies as the eldest son of one of the great proprietors of the soil," "must necessarily exercise a great influence over public opinion," his views are looked upon as of the highest importance. It is charged upon him that, in a very remarkable speech recently delivered, he has "prepared the country for the belief that the system of English agriculture is not formed on what he calls a natural principle, but supporting three classes of the community, is one which has failed in consequence, and will never be restored;" these three classes being, first, the proprietors of the soil; second, the farmers, an important portion of the great middle class; and third, the agricultural peasant.

In replying to this extraordinary statement, Lord Beaconsfield declares that there is no tenure of land which can be devised except on the condition of furnishing three incomes. Compared to "peasant proprietorship," which means small

land-holding in the mind of the Premier, the tenant farming of England seemed, to him, to be eminently successful. The peasant proprietor buys his farm with his hoarded and invested wages, or with borrowed money, on which the interest must be paid; and that is the first income. The erection of the necessary buildings, the supplying of tools and implements, and the stocking of the farm, must all be paid for from the earnings; and that is the second income. He must be clothed and fed from the receipts of the farm, which, together with the support of his family, employed with him, constitutes the wages of the farm; and that is the third income. Under peasant proprietorship these three incomes go to one class; under tenant farming they go to the three classes already designated. "The number and variety of the classes in England," he adds, "dependent upon the land, is the source of our strength. They have given us those proprietors of the soil who have been the creators of our liberty, in a great degree, and the best securities for local government. They have given us the farmers—the most important portion of the great middle class—and they have given us, lastly, the agricultural peasant, whose lot is deplored by those who are not acquainted with it, but who have, to my mind, during the last forty years, made more continuous progress than any class in Her Majesty's dominions."

The assumption of Lord Beaconsfield that it is better policy for a farm to support three classes in the community rather than one simply indicates his recognition of class as a political necessity, and his entire ignorance of the independence of him who, owning and cultivating his own land in this country, not as a peasant, but as a citizen, combines three classes in one, and represents what an American points to with so much pride

as the citizen-proprietorship of his own country. In well-organized society, as we understand it, there is no necessity for three classes; for the citizen who owns his land here, constituting himself this trinity of society which the Premier admires so much, being literally the "three in one," supplies all those forces to the State, the love of liberty, the love of the land, the love of progress, which are supplied Great Britain by the proprietors, the farmers and the peasants acting in separate capacities. Instead, however, of realizing the possibility of such proprietorship as this, and finding in it a remedy for the evils he had depicted, Lord Harrington takes an early occasion to state that he has no desire to alter the land laws, "for the purpose of encouraging the growth of a peasant proprietorship." "There were many persons," he said, "on all sides of politics, who thought that a considerable number of small proprietors would be a great advantage; but with the imperfect consideration which he had been able to give to the subject, he had never laid down the doctrine that the existing tenure of land in this country (England) should be altered, or that anything should be done to encourage any other tenure." And so the discussion ended, and large proprietorship and tenant-farming still remain.

The result, however, of the inquiry and the almost universally recognized fact that the agricultural interests of England are suffering, and that both proprietor and tenant fail to receive their reward, one for his capital, and the other for his labor, have brought about the appointment of a commission who are now inquiring into the sources of agricultural wealth here; the method by which agricultural products can be raised and exported profitably to the English market, and, I trust, into the tenure of land, which constitutes our citizen-proprietorship.

I doubt not they will discover in the cheap and luxuriant grazing lands of Texas, the source of our profitable production of beef, and in the fertile valleys of Illinois and Iowa and Indiana, the profitable grain fields from which our own people and theirs are fed. But I would have them study also our tenure of land, and learn the "great advantage" of a "considerable number of small proprietors" over that system of land-holding which in their own country is generally declared to be a failure. This system I have already described, and I repeat that it should be called among the various systems now recognized and discussed, the *citizen-proprietorship* of the soil.

The question of the capacity of this system to support a great moral population on American soil is the *American Problem*, to which I have already referred. That it encourages and fosters a spirit of freedom, and is managed by an intelligent and ambitious body of citizens, and is promotive of social and domestic peace and happiness, two centuries and a half of colonial and national life have satisfactorily demonstrated. That it supported an industrious and hardy and educated people in the early days of our republic, before other industries had been established here, is well known. The question now is—Will it continue to prosper under the increased demands of our own day, and enable the land-owner and cultivator to meet the demands made on him by the public and private wants incident to American civilization? Tenant-farming in England has failed, the peasant proprietorship of France offers no temptations to us; will our own system continue to prosper, and amidst all obstacles be accepted as the successful agricultural system of the world—a system supporting not a peasantry but a body of citizens enjoying all the rights and privileges which free citizenship can bestow? I am aware of the discouragement

under which our agricultural population is now laboring—dull local markets, small profits and heavy expenses. But I cannot forget what industry and economy accomplished for our ancestors, who first occupied the soil, and I see no reason to doubt that as it was with them, so it will be with us continually. That an ingenious application of labor to a small homestead will meet with an ample reward, I cannot doubt. The exercise of those virtues and faculties which give success in other branches of business must inevitably succeed in this.

A life thus profitably occupied means a life of frugality, foresight, prudence, industry and the most careful calculation. It furnishes no opportunity for the joy of successful or the despair of unsuccessful speculation. But it does provide a sphere in which self-control may lay the foundation of a contented and happy home, and a life of usefulness and happiness and prosperity. I am the more encouraged to state this from the fact that those who make this the land of their adoption are eager to possess the abandoned farms of our own people, and find in them all the prosperity and comfort they desire. I know many an out-lying and idle farm from which a fair fortune was reaped in a former generation, and from which a crop of strong, capable and useful men has been sent forth to take part in the business of the world. Is this thing impossible now? The methods may have changed; the advantageous localities may have changed; the markets may have changed; the economies of the business may have changed; but the opportunities for success have not changed. I am entirely unwilling to believe that a farm properly selected and arranged with reference to soil and markets may not remunerate the cultivator now, as it did formerly. And I urge upon all individuals and associations into whose hands are committed the

theory and practice of agriculture in this country to encourage that agricultural management which will remove the question of our system of land-holding and farming beyond a doubt, and place it firmly among the prosperous industries of the world, and recognized as such by all men.

And now, gentlemen, the existence of this society, whose honorable career of more than half a centnry is known and recognized of all men here, indicates the desire of the farmers of this county for investigation, comparison, education in all the important branches of agriculture. That the desire was created by the necessity, I cannot for a moment doubt. The simple and easy farming of the fathers prospered under the exercise of industry, economy, good judgment, and common sense. But it is not so now. With these facilities the successful farmer can hardly expect to succeed to the full measure of success unless guided by the best rules laid down by those who have endeavored to apply the results of careful scientific investigation to their work. It is economy that succeeds now ; the economical use of labor, of all the forces used on the farm; the economical use of manure and all fertilizers; the economical feeding of animals; the economical management of the domestic affairs of the farm.

Carelessness and extravagance cannot succeed. The unsystematic farmer may live, but he cannot thrive. But he, who with an enlightened mind lays down a definite plan of industry, and follows it, will never be betrayed by that calling which has always responded and will always respond to the earnest endeavor of those who pursue it with wisdom and devotion. We may be inclined to question the value of many of the modes of agricultural education which have been adopted in our day, but let no man, who has the welfare of the country at

heart, discourage the attempts which are made to cultivate and inform the minds of those who hold in their hands the most important of all our industries. The agricultural society may not display always an encouraging record of crops or the applied labor of a farm, but it will inevitably rouse a spirit of emulation and excite ambition, and set an example which will be felt in the community. The farmers' club may arrive at no conclusion, may begin a season with discussion, and decide no question under debate; but it will drop a hint or present an experiment which being accepted by some bright and thoughtful member, will lead to a long experience of successful farming. The agricultural college may not send a class of practical farmers into the community and upon the land each year, but it will educate some keen and capable and observing youth, who will enter the field of farming and so cultivate it that the community will learn to have confidence in his work, and will discover many a useful rule written down on his well-tilled and well-managed acres. As the wants and demands of American society increase, it will be found that the American system of land-holding requires that the American system of education be carried into this occupation as well as into all others. And it will also be found, I think, that they who have succeeded best in arranging and tilling their farms, and supplying a market, have instinctively adopted rules of husbandry which education offers to all who ask them of her. I urge, therefore, upon you a constant spirit of inquiry, a profound respect for every form of agricultural education, remembering that the knowledge which you possess was wrought out for you by your fathers, and that a still more accurate knowledge is the best legacy you can transmit to those who succeed you as the citizen-proprietors of the American soil.

Sung by the Lynn Choral Union at the Central Congregational Church, on the occasion of the annual address before the Society.

HYMN.

BY JOSEPH W. NYE, OF LYNN.

The generations come and go,
As Time's resistless tide doth flow,
The changing Seasons reappear
In turn, to form the circling year.

Again from Earth's exhaustless stores
A varied bounty Autumn pours ;
What Spring and Summer nursed with care,
She crowns with ripeness full and fair.

The noblest from the stall to-day,
Before us stand in fair array ;
From flocks and herds the choicest come,
To celebrate this "harvest home."

Here Flora finds a welcome place,
Adorning it with winning grace ;
With tributes chosen, tree and vine,
To aid the Jubilee combine !

Amid the treasures gathered here,
We sing the triumph of the Year,—
The highest strains our tongues employ
To sound the universal joy !

Let gratitude the heart inspire
To see fulfilled the fond desire,
And hope that what in faith we sow,
Will unto full fruition grow.

Thou God of harvests ! unto Thee
Shall all the praise and glory be ;
Man's toil would be in vain, and cease
Didst Thou not give the blest increase !

CATTLE SHOW AND FAIR.

The Show was held at Lynn, Sept. 30th and Oct. 1st, 1879. The attendance was very large. The exhibition of Stock, Ploughing Match, &c., was held on Fairchild's field, Boston street; that of Fruit, Domestic Manufactures, &c., at Music Hall Building, Central avenue.

The entries in the Stock department were as follows :—

Fat Cattle	3	Entries.
Bulls	9	"
Milch Cows	34	"
Heifers	27	"
Working Oxen	12	"
Steers	4	"
Town Team of Eight Horses,	1	"
Stallions	8	"
Brood Mares	7	"
Family Horses	7	"
Farm and Draft Horses	9	"
Pairs of Draft Horses	5	"
Colts	14	"
Swine	10	"
Sheep	18	"
Coops of Poultry	27	"
Ploughing Teams	21	"

There were also a large number of entries of Agricultural Implements and Machines, and Carriages.

The exhibition in the Hall, of Fruits, Flowers and Vegetables has never been surpassed at any of our Exhibitions, and the number of visitors to this department was very large.

CHAS. P. PRESTON, *Secretary.*

REPORTS OF COMMITTEES, &c.

FAT CATTLE.

We, the Committee on Fat Cattle, have attended to our duty and have awarded, to the best of our judgment, first premium of $12.00 to Mr. Amos C. Hathaway of Marblehead ; second, $10.00, to Mr. Henry Gardner of Peabody ; and third, to Town of Peabody, $6.00.

J. B. Thomas, A. T. Newhall, Joseph C. Shepherd, T. W. Hasseltine—*Committee.*

BULLS.

The Committee award the first premium of $10, for the best Ayrshire Bull under two years of age, to S. F. Newman, of Newbury.

Second premium of $6, for a Jersey Bull under two years old to Francis H. Appleton of Peabody.

Second premium of $6, for an Ayrshire Bull, two years and upwards, to J. W. Blodgett, of Saugus.

J. P. Palmer, Swampscott, Jersey, gratuity $5.

The number of Bulls on exhibition was very small (about half a dozen), and of these none of very decided merit. Whether the reason of the meagre show of Bulls was the location of exhibition in the extreme edge of the County, or the amount of the premiums offered, is more than we can tell. But this your Committee know, there are some splendid animals in the northern part of the County that did not appear at the exhibition.

The importance of using bulls of decided merit is not fully

appreciated by many farmers, which seems strange, when the impovement of our "Beef and Dairy Stock" is of so much importance, and the character of our stock is so quickly changed for the better. Witness, as an example, the difference between the Texan steer of to-day and the same even ten years ago, brought about by the use of fine Durham Bulls from Kentucky and other parts of the West. Results quite as favorable have been produced upon the dairy stock by the use of the full blood Bulls imported from the best milking stock of Europe.

It is not necessary to refer one to the Texan cattle alone, who remembers the old fashioned ox of New England with his big head and horns, sharp back, heavy forward and light hind quarters, rump and sirloin nearly half bone, and timber enough in his legs for two. These have almost entirely disappeared, and a still greater improvement will be called for in the immediate future by the demand for the best animals in the market to feed the epicure on the other side of the Atlantic.

Respectfully submitted,

J. Z. Gordon, Eldred S. Parker, T. G. Ordway.—*Committee.*

STATEMENT OF FRANCIS H. APPLETON.

BROADFIELDS FARM, PEABODY,
Sept. 30, 1879.

To the Committee on Bulls of the Essex Agricultural Society :—

SIRS :—I enter with you my Pure Blood Jersey Bull, "Suntaug," and have attached his pedigree to his pen. He was dropped May 29, 1878, and was bred by me, and I therefore enter him for the Jersey premium for bulls under two years old.

I also give you his pedigree below, all numbers there referring to the American Jersey Cattle Club Herd Register, published by Colonel Geo. E. Waring, Jr., of Newport, R. I.

His Dam, "Lady Essex," 4749, owned by me, in 1877 gave, from 5 13-100 quarts of milk, 1 lb. fresh butter.

Bull Suntaug—bred and owned by Francis H. Appleton, Peabody, Essex Co., Mass.

Sire Champion, 1109, owned by H. Saltonstall, Esq.; Dam Lady Essex, 4749, owned by F. H. Appleton.

Sire of Champion—Monarch of Roxbury, 499; Dam of Champion—Jennie Porter, 470.

Sire of Monarch of Roxbury—John C. Bas, 398; Dam of Monarch of Roxbury—Nellie, 289; both imported in 1868 by Mr. T. Motley.

Sire of Jennie Porter—Cour de Lion, 318; Dam of Jennie Porter—Jennie May, 473; both imported in 1866 by Mr. T. Motley.

Sire of Lady Essex—Magnet, 968; Dam of Lady Essex—Magnolia, 2543, imported by Mr. Motley in 1869.

Sire of Magnet—Mr. Micawber, 556; Dam of Magnet—Mabel, 2544; both imported by Mr. Motley.

I hereby certify that the above is correct.

Francis H. Appleton.

MILCH COWS.

Your Committee submit the following report:—

Number of entries, ten. For the best Milch Cow, either of Foreign, Native or Grade, not less than 4 nor more than 10 years old, with satisfactory evidence as to quantity and quality of milk, either by weight or measure, during the evening and morning of the first and last ten days of any month.

1st premium $12, to John S. Ives, Salem, for Grade Ayrshire Cow.

2d premium $6, to A. P. & R. Alley, Marblehead, for Grade Ayrshire and Short Horn cow.

Native or Grade, 5 years old and upward—1st premium of $12 to G. C. Noyes, Lynn, for Grade Ayrshire and Durham.

For the cow that makes the most butter in any single week from June 1st to Sept. 15th—1st premium of $12 to

Geo. K. Pevear, Lynn, for Jersey cow, May Flower; 2d premium $6, to Chas. J. Peabody, Topsfield, for Grade Jersey cow, Pet.

No premiums were given to Thorough-Breds, as no cows were entered whose pedigrees filled the definition of Pure Bred animals as laid down by the State Board of Agriculture. See page 7, General Rules of our Society.

The cow entered by Mr. Noyes was considered a remarkably fine specimen of a Milch cow, with great udder capacity. She is 7-8 Ayrshire and has all the characteristics of a Thoroughbred. The statement that she had not been dry for a number of years seemed somewhat extraordinary; but she was evidently a cow of great possibilities.

May Flower's yield of butter seems a very good one—240 lbs. or 113 qts. of milk, producing 11.5 lbs. butter, 1.64 lbs. butter per day—9.9 qts. milk to a lb. of butter. Pet gave a pound of butter per day, but we have no data as to the quantity of milk. The former calved in March, and the test for butter was made in May. The latter calved in June and the test was made in September. The last of May, on fresh grass, would be considered the better season for producing butter. The yields of both cows under the circumstances are, without doubt, above the average.

"Whatever we may think of our ancient ruler, King Cotton, there is no question as to the allegiance we owe to Queen Cow. Every one of our agricultural products, with the single exception of Indian corn, is surpassed in value by our dairy yield. The value of the cows and of the land especially devoted to their support, is reckoned at $1,300,000,000. The annual production of cheese is estimated at 350,000,000 lbs. and that of butter at 1,500,000,000 lbs. Their combined value, estimated at $350,000,000, is only one-fifth less than that of the corn crop. The production has increased thirty-three per cent. within the past year, and since the introduction of the American factory system in the manufacture of them, they have become important objects of export, the foreign sales

amounting, during the last season, to $13,000,000 for butter and $14,000,000 for cheese. The exportations this year have paid more than $1,000,000 freight, or enough to support a weekly line of steamers to Europe. They have paid $5,000,000 freight to the railroads of the country, and milk pays nearly as much more."*

We do not know where to find a more comprehensive though concise, statement of the importance and value of the Milch cow in the United States than in the above.

We say in the aggregate Queen Cow, and the title is well deserved, but no cow is worthy of belonging to the royal family who does not yield at least 2000 qts. of milk in a year. If this were only true of all, the above figures would be largely increased.

What we wish to show is that, at present prices, it does not pay to keep a cow that gives less milk than the quantity mentioned, and we believe with the present abundance of improved breeds of cattle there is no excuse for keeping a poor animal. Many thorough-breds can be now purchased at prices very little above that of common stock, so that the cost should not stand in the way of any one really wishing to improve his herd. To show the absolute need of improvement, we would state that according to statistics prepared a few years ago, the average in N. Y. dairies was 1300 qts. per cow, and in the *best* dairies only 1800 qts. 2000 qts. is a fair yield; but is it sufficient at present prices to leave any profit after the keep, &c., has been deducted?

The farmer who sells his milk at the door or delivers it to the contractor on the cars gets from 2 to 3 cts. per quart. Will a cow, yielding 2000 qts. per year, pay for her keep at these prices? We think not. This brings us to the cost of keeping a cow:—Reckoning 7 months at $6 and 5 months at $3 for feed—a low estimate where milk is the object,—we have $57 for the year. 1000 qts. at 2½ cts. and 1000 qts. at 3 cts.

---

*The Nation, Dec. 19, 1878.

equal to $55; there is no profit. Consequently it is evident that the quantity of milk must be increased or the price must be raised to leave any margin or profit. If you increase the yield to 2500 qts. per year its value will be $68.75, a profit of $11.75. Unless the farmer has the means of sending his milk direct to market, we imagine he will find it easier to increase the yield than to advance the price.

Butter.—Would there be more money in making butter or cheese than in selling milk at these prices? Let us see. 2000 qts., allowing 12 qts. to the pound, would produce say 167 lbs. of butter, which at 30 cts. would come to $50.10; deducting 5 cts. per lb. for making and marketing leaves $41.75, the butter and skim milk; the latter are valuable if fed on the farm, and tend to prevent exhaustion of soil.

Cheese.—2000 qts. of milk, allowing $4\frac{1}{2}$ qts. to the pound, would produce 444 lbs. of cheese, which at 10 cents per pound, would be $44.40, less cost of making, &c., $2\frac{1}{2}$ cents per pound, leaves only $33.30 and the whey. If the above figures are correct, they would seem to prove conclusively that milk at even $2\frac{1}{2}$ cents per quart for the whole year would give the producer more money than either butter or cheese. We are aware that many dairies receive more than 30 cents per pound for butter, but we also know that many more receive less.

While every effort should be made to increase the yield of the herd, there is a way by adopting which, the price of milk could be legitimately raised to the great benefit of all concerned, that is, the bringing of the producer into direct communication with the consumer. How can this be brought about? In two ways, namely: either individually to send the milk direct to market, or enter into an agreement with other parties with similar interests, and accomplish the same object by united efforts.

The first method has the merit of independence and can, perhaps, be managed as economically as the last, where large quantities of milk can be made on a farm. The last method is especially adapted to farmers keeping fewer cows who thus,

by united action, are able to stand on the same level as the larger farmers. In this way co-operation would give an opportunity of selling milk which otherwise would be beyond the reach of many. Co-operative milk selling is not a new thing. The Aylesbury Milk Co. of England, and the Rockland Milk Co. of New York, are good examples of what may be accomplished.

" It is only by a union of interests and action that the producers of milk can expect to become successful milk sellers. Already we hear of individual effort acting with insufficient information, and really in competition with those who are working under a similar line of policy. It would seem more business-like for such producers as wish to sell their milk direct to city consumers, to join some efficient organization and pull together. In this connection we learn that the United Society of Milk Sellers, with C. W. Felt of Northboro as manager, is now fairly in operation, and with prospect of a large business. The aim of this society is to sell milk direct from producer to consumer, and to reduce the cost of transportation."*

At Quakertown, Bucks Co., Pa., the dairymen lately became so disgusted with the price of milk sent to milkmen in Philadelphia—it having fallen to two cents per quart, delivered—that they met and formed a Dairy Association, with a capital of $4000, and built a creamery of the most approved form. We do not at this time propose to enter into a discussion of the merits of co-operative cheese and butter making, which has resulted in the establishment of a large number of factories all over the country, and has added so much to the wealth of the farming community, but shall confine our attention more particularly to the milk question.

A law passed by our last Legislature provides that all railroad corporations shall furnish the same facilities to a farmer wishing to send one can of milk as to persons sending larger quantities; so that at the present time the producer is not at

---

*American Cultivator, Aug. 30, 1879.

the mercy of the contractor to take whatsoever price may be offered, if he will only put himself in direct communication with the consumer and take the responsibility of sending his own milk to market.

The economy of cooperation commends itself. One man, one horse, and one wagon may take the milk of a dozen, or perhaps of a less number of producers to the railroad depot, or deliver it when possible, directly at the doors of consumers. The outlay of capital is thus borne by all interested in the undertaking, and not by one individual.

"If farmers understood the business details of their industry, if they had sufficient business discipline to confer with each other, and carefully determine, on commercial principles, what they ought to charge for their products,—having formed such cooperative associations as could execute their united will—they could then fix the prices of all their commodities, and hold them as steadily as they are now held after they get into the hands of commercial dealers. But the difficulty is, that farmers associate so little with each other, have never entered into any rational cooperation, but rather considered each other as competitors to be out-manœuvered in trade." . . . "If they understood the situation, they would see that the real interests of farmers are mutual and reciprocal—that there can be no natural antagonism between them."

"Until they are educated in common business principles, and can see the identity and mutuality of their interests, and form associations to direct in the disposal of their great staple crops, their interests will be traded upon without consulting them by the whole middle-men class.

"We do not condemn the middle-men. They merely act for themselves—buy the best they can, and sell the same. They form commercial alliances and boards of trade, and strengthen themselves in the most sensible way, although there is not the necessity for it as with farmers. But farmers passively submit to their decision—submit to the inevitable. And this must continue, there is no help for it, till farmers shall

think and act for themselves: and this requires so radical a change in this great body of society, that its accomplishment must be of slow growth.

"It is because these milk dairymen, who, producing the milk, may regulate its sale, on the principle of supply and demand, do not form associations for that purpose, that these 'few milk dealers' are kind enough to fix the price for them. They merely perform a duty that the milk dairymen omit! This is just like the self-sacrificing spirit of the middle-men everywhere. They are always spending their time in fixing the prices for the farmers: and yet the farmers do not seem to appreciate it."*

A very recent effort "for giving people good milk and farmers a fair profit," reported in the New York World, seems worthy of notice, as showing the tendency towards co-operation.

At a meeting of the Bedford Farmers' Club, at the residence of Mr. John Jay, near Katonah, Westchester Co., the following resolutions were adopted:—

1. That a committee of three be appointed to consider the feasibility of co-operation by the farmers of the vicinity, for the direct delivery, under their own direction, of milk and other farm products, to the consumers in New York, particularly as regards milk, the prices paid by the consumer and that received by the farmer. And the committee be requested to report their opinion on the tendency of such direct delivery, to economize expense, to harmonize the interests of the producer and consumer, to enlarge the share of profit coming to the farmer and the certainty of its returns, and as regards the consumer, on its tendency to afford additional security against adulteration, short measure and misrepresentation of any kind touching the character and value of the article.

2. That the said Committee, if persuaded of the feasibility of such an arrangement, be requested to report fully their views and to submit a plan for putting the scheme into operation, with provision for securing in all cases a proper standard

---

* National Live Stock Journal.

of excellence for maintaining alike the reputation of the farmers and the confidence of the public.

In offering the resolutions, Mr. Jay said that co-operation had received great attention in Germany and England, and has been considered in this country by all business men excepting farmers. Other business men have tried to protect their rights and enlarge their interests, while the farmers, who are the chief national strength, have stayed in a condition of feeble independence, without protecting themselves against railroads and partial legislation.

The report of the above mentioned committee will be anxiously awaited by all interested in the milk business.

Is it necessary for the farmers of Essex county to delay any longer in taking steps for the accomplishment of that which must evidently be for their mutual benefit? We think not.

Two profits can no longer be derived from the milk business, therefore the middle-men should give place to the farmer, who should demand and take the whole profit, for he deserves and needs it.

The time for action has arrived, when all good-intending milk producers, especially in the neighborhood of large towns or cities, should organize and "pull together," either for co-operative milk selling, or to fix a scale of prices, and provide means to prosecute the adulterators of that health-giving lacteal fluid so bountifully yielded by "Queen Cow."

J. D. W. French, *Chairman.*

STATEMENT OF JOHN S. IVES.

Salem, Sept. 30, 1879.

I enter for the consideration of your Committee my Grade Milch Cow, 8 years old. She dropped her last calf April 2, 1879, and will calve again Feb. 10th, being nearly five months with calf. From June 1st to June 10th, (10 days) she milked 207 quarts, or 20 2-3 quarts per day; from Sept. 15th to Sept. 25th (10 days), this month, she milked 110 quarts, or 11 quarts per day. She was fed last winter with corn fodder and

Hungarian Hay, with two buckets of Mangel Wurtzels per day; "no grain." This summer she has run in a common pasture with fifteen cows, and at night fed with corn fodder.

STATEMENT OF A. P. & R. ALLEY.

To the Committee on Milch Cows:—

We enter for premium our milch cow Mary, of Ayrshire and Short Horn blood, eleven years old; calved March 27, 1878; began measuring her milk April 1.

Record of her milk.

April,	527	quarts.
May,	536	"
June,	657	"
July,	618	"
August,	569	"
September,	523	"
October,	432	"
November,	329	"
December,	272	"
January,	203	"
	4666	"

Her feed for April and May was two bushels of carrots and mangolds mixed, and plenty of good hay.

From June 1 to July 25, pasture and three quarts meal and three quarts of shorts a day.

From July 25 to Oct. 1, two bushels of small potatoes a day and pasture.

From October to middle of November, two bushels of squash a day and pasture.

From middle of November to end of year, two bushels turnips, English hay and rowen.

STATEMENT OF G. C. NOYES.

One Grade Ayrshire Cow, eight years old, her Dam 3-4 Ayr-

shire 1-4 Durham, sired by an Ayrshire Bull. She now gives twenty-two quarts of milk per day. Least milk in a year five quarts per day—not dry at all.

Feed—four quarts fine feed and two quarts of meal per day.

She dropped calf two weeks ago.

STATEMENT OF GEO. K. PEVEAR.

Cow "May Flower," fawn and white, dropped May 1, 1872. Sire, R. S. Rogers's Bull. Dam, Pansy, 3d, No. 718. Jersey Herd Book, Vol. III.

"May Flower" dropped "Kate" March 12, 1879. When she was in full milk, she gave 20 quarts, and for an average of six months, 16 quarts per day.

May	25,	she gave	37	lbs. of milk.
"	26	"	39	"
"	27	"	38	"
"	28	"	39	"
"	29	"	40	"
"	30	"	37	"
"	31	"	40	"
7 days			240	pounds or 111.6 qts. milk,

from which we made 11½ pounds of butter.

She is now giving 10 quarts of very rich milk, per day.

We know but little about making butter, and don't know as the record she makes is a good one, but we do know that the butter was first class. Perhaps persons knowing more about making butter, would have made more pounds from the milk.

"Kate,"—Calf. Sired by Champion, and owned by Henry Saltonstall, Esq., of West Peabody, Mass. Dam, May Flower, dropped March 12, 1879. 6 months 18 days old.

STATEMENT OF CHAS. J. PEABODY.

To the Committee on Milch Cows :—

GENTLEMEN :—I enter for premium for the cow that makes

the most butter in any week from June 1 to Sept. 15, my cow "Pet." She is nine years old, was raised by me and is three-fourths Jersey. She calved in June last, and gave at time of calving fourteen quarts of milk per day, on grass only. She has had no *grain* this season, and has made one pound of butter per day in the month of September up to the 25th, with grass and one feed of corn fodder per day. While this is not an extraordinary amount, I think it above the average considering the season of the year and the keeping.

HERDS OF MILCH COWS.

The Committee on Herds of Milch Cows report as follows:

1st premium, $18.00, to J. W. Blodgett, of Saugus.

3d premium, $10.00, to Charles J. Peabody, of Topsfield.

Two herds only were entered for premium. The President of the Society, Mr. Benjamin P. Ware, entered a herd of five cows for exhibition; having taken a premium at a previous fair they were not entitled to another. The example of Mr. Ware, in being at the trouble and expense of exhibiting his herd, with no expectation of a premium, is deserving of mention and worthy of more frequent imitation.

There was the same failure by exhibitors as occurs every year, to comply with the requirements of the society as to a detailed statement of the keeping and yield of their cows. The rule of the society requires "a correct statement of the manner of keeping and yield for six months preceding the entry, or if all have not been in milk six months, then for a shorter time."

Mr. Blodgett gives the amount of milk sold, but not the amount actually produced, for he says part of it "was used in rearing stock," and besides, it is fair to presume that his family was not altogether deprived of a portion of it; nor is it a very violent presumption to suppose that the "rearing of stock" *may* refer to that reared in the house as well as to that

reared in the barn; but neither he nor Mr. Peabody says anything as to the yield of individual animals.

Each gives the date of the dropping of the last calf, but Mr. Blodgett gives no information at all as to the time of dropping the next calf. Mr. Peabody gives the time of the next calving of only three of his cows; the inference is that they are not in calf. These are important and, indeed, necessary elements in judging of the actual and comparative value of a herd of cows, and ought always to be stated.

Mr. Blodgett's exhibit was a very fine one. The cows were nearly all thoroughbred Ayrshires, the residue grade Ayrshires, and were all handsome, of good size, possessing all the points for which the good judge of a good cow always looks. They were in excellent condition, indicating the best of care and good feeding; any cow in the herd was fit for the butcher.

His statement shows the average daily yield for six months to have been 8.7 quarts per cow, without deducting the unknown quantity used in "rearing stock," whether in the house or in the barn. The committee judged, from verbal statements, that the average yield per cow, had all the milk been accounted for, would have been fully ten quarts per day, a good showing considering the times of the dropping of the calves.

Mr. Peabody's statement discloses poor feeding, and the appearance of the cows and their product for six months, corroborate his written statement. And yet the cows were naturally good milch cows—better than the average—and with better care and better feeding would have been a much more profitable herd.

The statement of each is annexed to this report.

The committee desire to express the hope that the Secretary may be able, in some way, to bring to the notice of the farmers of the county the importance and necessity of a full and accurate statement of the manner of keeping and yield, not only of the herd but of all the necessary facts concerning each cow of the herd. The committee were all present.

H. G. Herrick, Horace C. Ware, Alden C. Estes, Samuel A. Merrill, Elias Andrews—*Committee.*

STATEMENT OF J. W. BLODGETT.

To the Committee on Herd of Milch Cows of Essex Co., Mass.:

GENTS:—During the past six months I have kept eighteen cows; I have thirteen entered at the fair and five at home on the sick list. During the months of April and May the cows were fed on salt hay, with the exception of one feed per day of English hay, also, from six to eight quarts each of equal parts of Oil meal, Indian meal and shorts. The balance of the time they have run to pasture and had from two to four quarts of the same grain and what hay or corn fodder they would take. A part of the milk has been used for rearing stock.

Following I give the time each cow has calved; also, the number of cans of milk, containing eight and one-half quarts, sold per month:

Moll Pitcher,	dropped	calf,	Feb. 24, 1879.
Susy Avondale,	"	"	Dec. 1, 1878.
Frolic 4th,	"	"	Oct. 14, 1878.
Mary Burke,	"	"	Nov. 9, 1878.
Dolly 2d,	lost	"	May 17, 1879.
Parepa Rosa,	dropped	"	Dec. 28, 1878.
Lady Lyman,	"	"	Jan. 6, 1879.
Elsie,	"	"	March 1, 1879.
Louise,	"	"	June 20, 1879.
Pet,	"	"	April 13, 1879.
Pride of Saugus,	"	"	May, 1879.
Flora,	"	"	March, 1879.
Nellie,	"	"	March 28, 1879.
Jennie,	"	"	March 27, 1879.
Myrtie,	"	"	May 1, 1879.
Duchess,	"	"	May 9, 1879.
Elsie Saunders,	"	"	Nov. 27, 1878.
Christmas,	"	"	April 17, 1879.

Milk sold as follows:—

April, 1879, . . 544 Cans.

May,	1879, . . .	660	Cans.
June,	" . .	611	"
July,	" . . .	586½	"
Aug.,	" . .	504½	"
Sept.,	" . . .	435½	"

STATEMENT OF CHARLES J. PEABODY.

This herd of Milch Cows, eight in number, entered for premium, has not been fixed up to exhibit, but came from home with no extra feed or care. I describe them by number as they stand in the pens.

No. 1. Is a native cow, 11 years of age; calved, July 25; gave then 13 qts. per day, now gives 10½.

No. 2. Is grade Jersey, 9 years old; calved, July 18; gave then 15 quarts per day, now gives 12.

No. 3. Native, 7 years old; calved, Dec. 28, 1878, will next calve in December or January; gave, at time of calving, 14 quarts per day, has been dry about 20 days.

No. 4. Grade Jersey, 9 years old; calved in June last; then gave 14 quarts per day, now gives 10. Raised by me.

No. 5. Grade Ayrshire, 4 years old; calved in July; then gave 12 quarts per day, now gives 9. Raised by me.

No. 6. Grade Ayrshire, 4 years old; said to have calved in April, will next calve, April 4. I bought her in June; then gave 7½ quarts per day, now gives 5½.

No. 7. Grade Jersey, 3 years old; calved, March 20; then gave 9 quarts, now gives 6 quarts per day; will next calve in April. Raised by me.

No. 8. Grade Jersey; calved, May 10; then gave 11 qts., now gives 8 per day; will next calve May 1. This I also raised.

The whole produce of the herd since April 1, 1879, is as follows —

Butter, 370 pounds.

Milk, 2160 quarts. This is in addition to the amount used in the manufacture of butter.

Calves sold to the amount of $22.50.

Skimmed milk and butter milk, fed to pigs, estimated to be worth one cent per quart, $30.00.

The cows were fed in winter five times per day, 2 feeds salt hay, 2 corn stalks, 1 English hay, 4 to 6 quarts cob meal to each of those giving milk.

Summer feed, grass only from May 15 to Aug. 1, from which date to Sept. 27, corn fodder at night in addition. No grain is fed.

Milked at half past five in the morning, half past six at night.

Watered twice a day in winter, water in the pasture and in the yard at night.

HEIFERS—FIRST CLASS.

The Committee award to:

J. W. Blodgett, Saugus, Thoroughbred Ayrshire 2 years old, 1st premium, $12.

H. A. Pevear, Lynn, Jersey do do, 1st premium, $12.

J. W. Blodgett, Saugus, Ayrshire, 2nd premium, $6.

J. A. Rogers, James Nason, Henry E. Kimball—*Committee.*

HEIFERS—SECOND CLASS.

The Committee on Native or Grade Heifers have attended to their duty and have awarded the premiums as follows:

To John S. Ives, Salem, on his 3 year old Heifer in milk, the 1st premium, $12.

To John A. Jones, Lynn, on his 3 year old Heifer in milk, the second premium, $6.

To Sydney F. Newman, Newbury, on his 2 year old Heifer, the first premium of $6.00

To John S. Ives, Salem, on his 2 year old Heifer, the 2d premium of $4.00

To Sidney F. Newman, Newbury, on his Heifer Calf, 10 months old, the first premium of $5.00. On his Heifer Calf, 8 months old, the 2d premium of $3.00.

Aaron Low, H. C. Harnden, H. W. Foster, David Stiles—*Committee.*

TOWN TEAMS.

The Committee award to the citizens of Lynn for town team of Horses, 1st premium, $30.00.

T. T. Paine, Jos. Longfellow, J. R. Allen—*Committee.*

WORKING OXEN AND STEERS.

To Henry Gardner of Peabody, for Working Oxen, 1st premium, $12.

To R. S. Bray, of Newbury, for do do, 2d premium, $10.

To J. J. H. Gregory, of Marblehead, for do do, 3d premium, $8.

To Horace P. Noyes, of Newbury, for Working Steers, 1st premium, $10.

To W. W. Perkins, of Newbury, for do do, 2d premium, $8.

Daniel G. Todd, Hartwell B. Abbott, Dudley Bradstreet, Caleb Childs, R. W. Ricker—*Committee.*

STEERS.

The Committee on Steers found four pairs of Hereford Steers all well broken, and presented for premiums, by Byron K. and Benjamin and Ralph Farnum, of North Andover,

grandsons of Mr. Jacob Farnum, who, with his sons, have ever taken quite an interest in our exhibitions, and we wish this spirit of encouraging the boys might be more generally displayed by the members of our society. The 2 years old Steers, presented by Byron K. Farnum, attracted great attention, as they were broken to work on either side, and handy without a yoke, and we awarded him the first premium of $6, and also the 1st premium of $4 on his 6 months calves; and to Benny and Ralph Farnum, the 1st premium of $5 for their yearlings, and on their two years old, the 2d premium, $5.

The Committee consider the boys entitled to great credit for the thorough manner in which the steers were all broken, and would suggest that the society offer a premium for the best broken Steers of 2 years old and under that age.

Respectfully submitted for the Committee,

B. S. Barnes, *Chairman.*

STALLIONS.

The Committee on Stallions would report that they have awarded the first premium of $15 to George W. Rogers, of Salem, for his 5 year old Stallion; the second premium, of $10, to Chas. S. Clark, of Salem, for his 5 year old Stallion, Lexington; the third premium, of $8, to H. M. George, of Saugus, for his 4 year old Stallion, Volunteer Prince. In the second class they have awarded to J. J. Downing, Andover, the first premium of $10, for his three year old Stallion Colt, it being the only one offered for premium. They have awarded the special premium, of $25, to Alley & Crowninshield, for their Stallion, Winchester.

Wm. Cogswell, *Chairman.*

BROOD MARES.

The Committee have met and examined all the Brood Mares

and foals offered for premium, and award the premiums as follows :—

The first premium, of $15, to E. & A. W. Mansfield, of Peabody ; second premium, of $10, to Chas. O. Beede, of Lynn ; third premium, of $8, to J. H. Preble, of Lynn.

C. H. Gould, A. B. Woodis, George P. Wilkins, M. B. Merrill—*Committee.*

FAMILY HORSES.

The Committee on Family Horses met on the Fair grounds at the time appointed, and having attended to their duty would submit the following report to the Society.

There were seven horses of this class presented for our examination, not one of their owners having complied strictly with the plain and necessary rules of the society. But in justice to the animals presented, as well as their owners, the committee, after very careful examination, awarded the following premiums :—

H. M. George, East Saugus, first premium, $15.

John Grout, of Danvers, second premium, $10.

Daniel G. Todd, of Rowley, third premium, $8.

In concluding this report, your Committee would make a few suggestions which, if regarded by competitors for premiums in this class of horses, would prevent much disappointment among the owners of these animals, and save the committees much useless labor.

First, the family horse should be perfectly sound, from end to end, and free from all habits or tricks that would render him unsafe for any adult member of the family to use for all family purposes.

Second, he should be of fair size, not weighing less than a thousand pounds nor more than eleven hundred pounds.

Third, and in order to secure that development and culture necessary in a family horse, the animal should not be less than six years old, (eight would be better) nor more than ten or

twelve. Colts may have all the qualities prospectively, but they need time and cultivation to mature into the perfect family horse.

Fourth, remember that this class of horses does not embrace the extremes of the cart or draft horse on the one hand, nor the exclusively trotting horse on the other, however desirable these qualities may be in their proper class.

Fifth, when you have such an animal and desire to enter it for a premium in this class, then make your entry at the Secretary's office at the proper time, accompanied with a written statement of the *condition*, *age*, *weight*, *habits*, and, if possible, the *pedigree* of your horse, signing your full name to your statement, and then be sure to be at the pens at the time appointed for the committee to make their examination, with suitable harness and carriage in which to show your animals, and to answer any questions the committee may wish to ask.

O. S. Butler, *Chairman ;* Henry A. Burnham, M. C. Andrews, A. E. Lufkin, J. N. Rolfe.—*Committee.*

FARM AND DRAFT HORSES.

The Committee report that nine horses were entered for premium, and all performed the work well. We award the four premiums at our disposal according to the best of our ability. There were horses weighing 1200 lbs., and also, those weighing 150 to 175 lbs. less, all doing their work well.

Other horses were exhibited that were not employed on farms all the time, which we think should not compete with those used on farms exclusively.

We want for a farm horse, a fair traveller, and one that is sure at a pull, and also free from nervousness.

We award the first premium to R. S. Bray, of Newbury, $15.

Second, to J. A. Illsley, of Georgetown, $12.

Third, to W. A. Dane, of Hamilton, $10.

Fourth, to A. P. & R. Alley, of Marblehead, $6.

H. M. Goodrich, H. Young—*Committee.*

PAIRS OF DRAFT HORSES.

The Committee on pairs of draft horses award premiums as follows :—

To Edward P. Perley, of Danvers, first premium, $15.00.

To A. P. & R. Alley, of Marblehead, 2d premium, $10.00.

To Jonas Rollins, of Danvers, 3d premium, $5.00.

C. H. Gould, D. Knowlton, Wm. Thurlow, David Stiles, S. S. Pratt, A. B. Woodis—*Committee.*

COLTS—FIRST CLASS.

The Committee report as follows :—

Four Years Old Colts, five entries. Reuben Alley, Marblehead, first premium, $12; John Gibney, Salem, 2d premium, $8 ; Amos F. Breed, Lynn, fourth premium, $5.

Three Years Old, three entries. G. A. Newhall, Lynn, first premium, $10.

Edward Kent, Albert Kimball, Aaron Knowlton, Horace Ware—*Committee.*

COLTS—SECOND CLASS.

The Committee report, for Two Years Old—H. M. George, Saugus, first premium, $8 ; J. P. Palmer, Swampscott, second premium, $5.

Yearling—D. G. Todd, Rowley, first premium, $6.

James Flint, J. A. Hoyt, *Committee.*

SWINE.—FIRST CLASS.

The Committee on Swine met on the grounds and report as follows :—

Alfred P. Merritt, entered three Poland China Pigs, but no

premium can be given, as the rules require "not less than four to be entered."

Asa T. Newhall, Lynn, Litter Weaned Pigs, first premium, $10.00 ; M. Birmingham, Salem, second premium, $6.00.

S. E. Marsh, Lynn, Breeding Sow, first premium, $10.00 ; William Gaynon, Lynn, second premium, $6.00.

William Birmingham, Salem, Boar, first premium, $10.00.

B. P. Ware, not having given the age of his Litter, no premium can be given.

The task of awarding was a very light one, owing to the small exhibit, there being not above two entries in any class, which seems to show a lack of interest on the part of the members of the society.

It seems a duty of the Committee to urge upon exhibitors the necessity of complying with the rules in regard to making full statements, as for instance :—one of the finest litters of pigs at the fair had no statement as to their age, debarring them, of course, from competition. Another exhibitor, showed only three, when there should have been four. It is apparent, that the pig is a neglected beast, and his requirements should be studied more closely. All of us would do well to go to our Irish neighbor and learn points from him. It is a noticeable fact, that he always has a good animal, and for the very reason that he takes good care of him.

F. S. C. Herrick, S. Longfellow, R. G. Buxton, George L. Hawkes—*Committee.*

SWINE—SECOND CLASS.

The Committee award as follows :—

T. Jefferson Coolidge, Manchester, Breeding Sow, first premium, $10.00 ; Robert G. Buxton, Peabody, 2d premium, $6.

Robert G. Buxton, Peabody, Boar, first premium, $10.00.

Daniel Carlton, North Andover, Weaned Pigs, second premium, $6.

Doane Cogswell, Jasper Rea, David Wentzell, Albert Berry, John Foster—*Committee.*

SHEEP.

Tho Committee award as follows :—

To James Marsh, Peabody, for best ten Sheep, three years old, and upwards, first premium, $8.

William G. Horton, Ipswich, Full Blood Cotswold Buck, first premium, $8.

Otis F. Putnam, Danvers, Cotswold Buck, 2d premium, $4.

A. L. Moore, John A. Hoyt, Henry G. Kimball, Moses A. Plummer—*Committee.*

POULTRY—FIRST CLASS.

The Committee award as follows :—

To D. R. Palmer, Swampscott, Buff Cochin Fowls, second premium, $1.50.

C. L. Beckett, Peabody, Lt. Brahma Fowls, first premium, $3; W. M. Ward, Peabody, second premium, $1.50.

W. M. Ward, Peabody, Lt. Brahma Chicks, first premium, $2; C. L. Beckett, Peabody, second premium, $1.

S. E. Marsh, Lynn, Ducks, first premium, $2.

C. L. Beckett, Peabody, best Collection of Fowls, diploma.

M. N. Branscomb, Lynn, Lt. Brahma Chicks, gratuity, 50 c.

Peter M. Neal, Lynn, for Coop of Fowls showing greatest profit, first premium, $5. This flock, of four Light Brahma hens, and eight others, cross of the same breed, show a profit of $63.25 for one year. (See statement.)

Fred. J. Coffin, Daniel Buxton, jr., W. H. Allen—*Committee.*

STATEMENT OF P. M. NEAL.

I put four Light Brahma hens two years old, three Brown

Leghorn, two years old, and eight cross of the same, 1 year old, with one rooster, in my hennery on the 1st day of Jan'y, 1878. They had the range of my garden, with the exception of about four and a half months, during the warmest weather. All weeds from my garden were deposited within their enclosure—in fact, they had grass or weeds every day during the spring and summer, and during the winter I gave them two or three times a week some green vegetables cut up, such as turnips, beets, carrots, cabbages, &c. The sides of my hennery and the nests are lined with coal-tar paper, and I have never seen any vermin in the pens since I adopted this method. I also put kerosene oil on the roosts as often as twice a month. If any one will adopt this plan and keep the premises clean and give plenty of fresh water and good food, there will be but little danger of disease among their fowl. Below I give the produce of these fifteen hens for one year with the cost of keeping. The price of the eggs may appear a little high, but as I used them in my own family, I have given the price at what they were worth at retail for fresh eggs.

Jan.,	13	3-12	dozen	eggs,	35	cts.,	$4.64	
Feb.,	15	5-12	"	"	35	"	5.40	
March,	25	11-12	"	"	25	"	6.48	
April,	25	4-12	"	"	22	"	5.57	
May,	19	3-12	"	"	25	"	4.82	
June,	19	9-12	"	"	25	"	4.94	
July,	23	7-12	"	"	23	"	5.40	
Aug.,	18		"	"	22	"	3.96	
Sept.,	17	7-12	"	"	25	"	4.40	
Oct.,	9	10-12	"	"	33	"	3.25	
Nov.,	4	8-12	"	"	40	"	1.87	
Dec.,	3	7-12	"	"	40	"	1.43	
	196	2-12	"	"			$52 16	
Dressed poultry, 81 1-2 pounds,							18 74	
Added to stock, 17 hens at 75 cts.,							12 75	
Gross receipts,								$83 65

Gross receipts, - . - - - - - -		$83 65
Cost :—28 bushels corn and meal, 60 cts.,	16 80	
2 bushels wheat screenings, $1.00,	2 00	
2 bushels barley, 80 cts.,	1 60	20 40
Net profits,		$63 25

I have made no account of waste from the house, but as an offset the Indian meal used in the house was all charged to hen's account. I have three barrels of pure hen manure, worth at least $1.50 per barrel.

POULTRY—SECOND CLASS.

The Committee award :—

To G. W. Harris, Lynn, for Sea Bright Bantam Chicks, 1st premium, $2.

Stephen Connolly, Beverly, Game Bantam Chicks, 1st premium, $2 ; W. M. Ward, Peabody, 2d premium, $1.

H. Morton, Lynn, Plymouth Rock Chicks, 1st premium, $2; P. M. Neal, Lynn, 2d premium, $1.

Robert Winn, Salem, W. Leghorn Chicks, 1st premium, $2; E. W. Pecker, Lynn, 2d premium, $1.

E. H. Barnard, A. F. Harvey, John I. Ladd—*Committee.*

PLOUGHING—DOUBLE TEAMS.

The Committee award to :—

Joseph Goodridge, West Newbury, Eagle 20, 1st prem., $12.

J. L. Farnham, North Andover, Hussey, 2d prem., $10.

Jaques & Bray, Newbury, Eagle 20, 3d prem., $9.

J. J. H. Gregory, Marblehead, G. W. Winslow, Ploughman, 4th prem., $8. Plough made by Mr. Winslow, who ploughed at the show forty-nine years ago.

James P. King, Wilbur F. Procter, Alvin Smith, T. G. Ordway, Hiram Goodhue—*Committee.*

PLOUGHING—SINGLE TEAMS.

The Committee award to :—

J. J. H. Gregory, of Marblehead, Lion Plough, 1st prem., $10.

R. T. Jaques, Newbury, Hussey Plough, 2d prem., $7.

W. E. Merrill, Newbury, Hussey Plough, 3d prem., $5.

Horace Ware, Henry W. Foster, Daniel G. Todd, Aaron Knowlton, Edward Kent—*Committee.*

PLOUGHING WITH TWO HORSES.

The Committee award to :—

J. W. Blodgett, Saugus, Oliver Chilled Plough, 1st prem., $12.

Asa T. Newhall, Lynn, Oliver Chilled Plough, 2d prem., $10.

Poor and Maguire, West Newbury, 3d prem., $8.

R. S. Bray, Newbury, 4th prem., $6.

Paul T. Winkley, Jr., Newburyport, 5th prem., $4.

Wm. E. Kimball, A. M. Robinson, David Smith, D. M. Cole, E. Harrington—*Committee.*

PLOUGHING WITH THREE OR MORE HORSES.

The Committee award :—

To A. P. & R. Alley, Marblehead, Oliver Chilled Plough No. 40, R. Alley, driver, Peter Winslow, Ploughman, 1st prem., $10.

Ansel W. Putnam, C. J. Peabody, J. G. Page, Anthony Hatch—*Committee.*

PLOUGHING WITH SWIVEL PLOUGHS.

There were three entries for Swivel Ploughs. There were horse teams entered by Edward P. Perley and Jonas Rollins of Danvers, two horses each. One ox-team entered by Messrs. Wilkins and Bachelder, of Middleton.

The work done by the horse teams was good, and that done by Mr. Perley particularly so. The furrows were turned over fair and handsome.

Your committee would recommend the first premium of ten dollars to Edward P. Perley. The plough he used was Pettingill's patent No. 3.

They would recommend the second premium of six dollars to Jonas Rollins. He used the Granger Plough No. 3.

The work done by the ox-team was not so good as that done by the horse teams. After some consultation among the Committee, they concluded to recommend the fourth premium of five dollars to be paid to Messrs. Wilkins and Batchelder.

The writer is of the opinion that farmers often mistake in using light ploughs, thinking by so doing a lighter team will answer the purpose, and thereby save expense. We mean particularly on rocky land or where there are pebble stones.

We remember a case many years ago when the fair was held in Andover, a man in Methuen concluded to try his luck with a two-horse team. He went to one of the manufacturers in Boston who proposed giving him a plough provided he would take the first premium. He brought home two ploughs of different sizes and to our field to try them. He at first used the lighter one which was not satisfactory, as it was disturbed by some small stones in the soil. He then used the larger one which made good work. He used it at the fair, took the first premium, and kept the plough as a gratuity. We afterwards purchased the plough and it proved a good one. The lighter plow might have answered well where the land was light and free of stones.

JOSEPH HOW, *Chairman.*

AGRICULTURAL IMPLEMENTS.

The exhibition of Agricultural Implements, though not a large one, contained, as usual, some excellent specimens of that ingenuity for which the inhabitants of the United States have acquired a world-wide reputation. Whittemore Bros. of Boston were the principal exhibitors, presenting some seventy-five implements. Among them the Oliver Chilled Plough, the Yankee Hay Rake, and Woods' Mowing Machine appeared to the Committee to be especially worthy of commendation. The clause in the regulations of the society, that "No premium or gratuity will be awarded for any Mower, Horse Rake, Tedder or other machine, the merit of which can be known only by actual trial in the field," is evidently founded in good practical sense, and with such limitation to their sphere of action, the Committee will only say that the Oliver plough struck their eye as having a very good thing in its "jointer," a kind of a junior plough share, which looked as though it might turn down, for covering with the main plough, tall grass and weeds, thus saving the labor of roughly cutting over with a scythe. The Yankee Horse Rake appeared to be free from the great fault of most of the class, scratching the ground, and filling the hay with dust; indeed, one of the well-known farmer family of the Bushbys, who chanced to be near, gave, as his experience in their use, that the hay raked by them was as free from dust as when hand raked. The improved Woods' Mowing Machine is understood to have combined with the old machine all the good features of the Sprague Mower.

The Granger Plow, exhibited by the Wadleigh Plow Co. of Meredith, N. H., was of the swivel class, having the peculiarity of a double mould board, by which it was claimed that the work done was equal to that by the best of landside plows, which would certainly be a great gain when, with all their excellent qualities, the deficiencies of the swivel class of plows are considered. To the committee, the plow appeared to handle rather heavy and be a little complicated in its struc-

ture, but the idea of a double mould board struck them as a valuable novelty worthy of recognition.

E. S. Flint of Danvers exhibited a Hand Corn Planter. This implement appeared to do its work well for hill planting, for which it was evidently designed, but why will farmers plant in hills, either corn or potatoes, when drill planting has been proved to yield greater crops, while with modern implements the crops thus planted can be cultivated at less expense?

Isaac Little, of Newbury, exhibited a patent Horse Hitch, which struck the committee as likely to be a good thing with a class of horses, though, as was suggested, it would be likely to do best with those horses that do not need hitchings. Still the great importance of encouraging any device that might prevent some of that class of deplorable accidents with which the daily press teem, led the committee to recognize it with a premium.

It was a matter of some surprise that no specimen of the Manure Spreading Cart was on exhibition. The Chairman has two in use on his Middleton farms, and is exceedingly pleased with them. No hand work can compare with what they do, either in rapidity or thoroughness of work. The manure is torn into fine particles which flow in a continuous stream from the rear of the cart. The bottom is an endless apron which passes the manure to the rear, where it is torn asunder and scattered in a fine shower by a revolving cylinder set with spikes, which extends the width of the cart. The coarsest, the roughest and the toughest of manures are all mastered by it. Three men loaded and spread forty loads of rough compost in a day, when the land was not far from the manure heap. As every practical farmer knows, fine manure thoroughly spread, is worth to him a quarter more than the same half scattered in coarse lumps; while the great fault of three-fourths of ordinary farm-hands, that of leaving the manure twice as thick where the heaps were dropped as on the remainder of the field, is completely obviated by this valuable machine. In its practical value to the farmer, the Chairman would rank it with the mowing machine and hay tedder.

There was on exhibition in the tent an ancient wooden mould board plow, made forty-four years ago by Washington Winslow of Marblehead, and used by him in the plowing match of the day. Mr. Winslow took one of the prizes just fifty years ago, and hale and hearty, steps forward to compete at the end of half a century with a plow of his own manufacture, while two of his sons hold plows in the same field. Can any sister county produce a like trio?

The Committee have made the following awards, viz. :—

For the best collection of Implements and Machines, $15 and Diploma, to Whittemore Bros. of Boston.

To Wadleigh Plow Co. for Granger Plow, $10.

W. D. Huntington, Lynn, Adjustable Harrow, $5.

E. E. Lummus & Co., for Frank Bramer's new Randal Harrow, $5.

Robert F. Dodge, Wenham, Prescott's Door Hanger, $5.

Isaac Little, Newbury, Patent Horse Hitch, $3.

J. J. H. Gregory, R. A. Smith, *for the Committee.*

CARRIAGES.

The Committee on Carriages have attended to their duties and report, viz. :—

To Sawyer & Chase, of Lynn, best display, $15.

To T. W. Lane, Amesbury, good display, $6.

To William Chase & Son of Merrimac, one fine Extension Top Carryall, $5.

To Dole & Osgood, Peabody, Platform Express, $4.

To Gilman Andrews, of Salem, 1 Express Wagon, $3.

To H. P. Whipple, of Danvers, 1 Express Wagon, $3.

To R. E. Clarkson, of Amesbury, 1 Spring Sleigh, $3.

To Bailey & Wood, of Boston, for Sleigh in Wood and Iron, we award the Diploma.

The Committee regret the small amount of money at their

disposal, considering the unusual display of good carriages, especially that of Sawyer & Chase, of Lynn, and one or two others.

Thomas K. Leach, Aaron Sawyer, John Meacom, Frank Marsh—*Committee.*

DAIRY.

There were ten specimens of Butter presented for premium, one, however, of only "two pats," and one tub for exhibition only. Of the exhibitors, six only gave written statements according to the rules of the society. One of the specimens before us would have received a premium, but not complying with the rules, by a written statement, the committee decided it not entitled. They, therefore, recommend the following premiums, viz. :—

Mrs. A. W. Patch, Hamilton, 1st premium, $10 ; Mrs. Sarah L. Ridgway, West Newbury, 2d premium, $8 ; Mrs. Farnham Stiles, Middleton, 3d premium, $6 ; John K. Bancroft, Lynnfield, 4th premium, $4.

There was only one specimen of Cheese exhibited, and after examination and deliberation, we decided unanimously to recommend no premium.

JOHN PRICE, *for the Committee.*

STATEMENT OF MRS. A. W. PATCH.

I enter for premium fifteen pounds of September butter, made in the following manner : The milk was strained in thoroughly scalded pans, and allowed to stand from twenty-four to forty-eight hours, according to the weather, being careful to skim the cream before the milk turns. Stir the cream daily, churn once a week, never put water after it comes ; salt, an ounce to a pound. Let it stand over night, then work it over, weigh it into pound lumps ready for market.

STATEMENT OF SARAH L. RIDGWAY.

To the Committee on Dairy :—

I enter for premium ten pounds of September Butter, made in the following manner : The milk was strained in tin pans and allowed to remain thirty-six hours, then skimmed into tin pails and stirred at every skimming. As soon as churned, the butter was rinsed in cold water and salted to the taste with rock salt, worked twice, and made into pound lumps as presented.

STATEMENT OF MRS. FARNHAM STILES.

I present for your inspection seven and one-half pounds of September butter. This butter is salted for winter use, and is made as follows, from Jersey and Ayrshire cows. The milk is strained in tin pans, and set in a cool dairy room, skimmed as soon as the cream is fully raised, put into a stone jar and stirred every day ; churn once a week or oftener according to the weather. The butter taken from churn, worked and salted to taste, let it stand till next day, worked again and made into lumps. I keep my butter in lumps set in stone jars, with firm paper tied over the top and the cover over that. I have no trouble in keeping my butter in this way perfectly sweet for a year, if required.

STATEMENT OF J. K. BANCROFT.

The milk from one Jersey and three native cows is set in shallow pans. The cream is taken off about the time the milk changes, and placed in a stone jar for four days, being stirred every day upon the addition of fresh cream. The butter is taken from the churn, the milk is worked out and the salt added, about one ounce to a pound of butter. It then stands twenty-four hours, when it is again worked and moulded.

BREAD AND HONEY.

The Committee on Bread and Honey report 22 entries for Bread, and 1 for Honey, and 1 entry of improved varieties of Meal.

1st premium on Bread to Mrs. J. F. Patten of Lynn, $3; 2d premium to Mrs. J. L. B. Adams, Lynn, $2.

Gratuities of $1 to Mrs. N. E. Ladd of Groveland, Mrs. D. R. Parker of Groveland, Miss Clara Haynes of Lynn and Mrs. Richard Breed of Lynn.

To N. N. Dummer of Rowley, Gratuity for Graham Bread, $1.

To Wm. Griffin of Lynn, Gratuity on Bread and Cake, $2.

To Alfred Green of Salisbury, for Honey, $2.

To Mrs. George Estes of Lynn, Gratuity for Sample Cake, $1.

To N. N. Dummer, Gratuity for Improved Varieties of Meal, $2.

JOSIAH NEWHALL, *for the Committee.*

PEARS.

Your Committee have the pleasure to report that the number of exhibitors this year, and the number of plates of pears exhibited, more than double those of previous years. The quantity and quality of the fruit were far superior to any we have ever seen in this, or in any other county, and we congratulate Essex county, and the city of Lynn more especially, for this unparalleled show of pears.

The whole number of exhibitors of pears was 186; number of plates exhibited, 878; number of varieties, 86, as follows:— 34 plates of Bartlett, 36 Belle Lucrative, 33 Beurre Bosc, 46 Beurre Clairgeau, 44 Beurre d' Anjou, 23 Buffum, 2 Clapp's Favorite, 59 Duchesse d' Angouleme, 12 Dana's Hovey, 7 Beurre Golden of Bilboa, 38 Lawrence, 65 Louis Bonne de Jersey, 9 Maria Louise, 21 Onondaga, 10 Paradise d' Automne,

51 Seckel, 8 St. Michael Archange, 44 Sheldon, 34 Urbaniste, 33 Vicar of Winkfield, 17 Winter Nelis, 13 Beurre Diel, 13 Flemish Beauty, 8 Beurre d' Angleterre, 4 Merriam, 8 Napoleon, 1 Beurre Oswego, 1 Gratioli of Jersey, 1 Princess St. Germain, 1 Pater Noster, 1 Columbia, 2 Doyenne du Comice, 1 Knight's Monarch, 1 Triumph d' Massett, 3 Jalousie de Fontenay, 3 Andrews, 1 Fig-pear, 1 Lewis, 2 Queen of the Low Countries, 1 Jamenette, 1 Duchesse d' Orleans, 2 Brandywine, 11 Howell, 5 Glout Morceau, 3 Pound Pear, 2 Kingsessing, 2 Beurre Gris d' Hiver, 9 Beurre Superfin, 1 Beurre Astor, 5 Beurre d' Amaulis, 3 Beurre Duranz, 4 Beurre d' Aremberg, 2 Beurre Starkman, 2 Beurre Mansion, 3 Beurre Hardy, 3 Beurre Easter, 3 Bezi de la Motte, 1 Rutter, 7 Doyenne d' Alencon, 4 Belle Epine Dumas, 2 Belle et Bonne, 4 Seedlings, 3 Fulton, 1 Duchesss d' Bordeaux, 1 McLaughlin, 2 Chelmsford, 1 Stevens' Genesee, 5 Souvenir du Congress, 2 Dix, 2 Des-Nonnes, 2 De Tongues, 14 Doyenne Boussack, 2 Pratt, 5 Neuveau Poiteau, 2 Rousselet de Rheims, 1 Bergamotte d' Esperen, 2 Josephine, 4 Colittas, 3 Washington, 1 White Sawyer, 2 Edmands, 2 Mt. Vernon, 1 Citron des Carmas, 1 assorted lot, and 1636 specimens from the old Endicott pear tree in Danvers.

Amesbury exhibited 29 plates of 29 varieties from one person, for which, $3 in premiums were awarded; Bradford, 19 plates, 15 varieties, from two persons, $11 in premiums and gratuities; Danvers, 53 plates, 45 varieties, from four persons, $6 in premiums; East Saugus, 23 plates, 12 varieties, from nine persons, $1 gratuity; Essex, 14 plates, 8 varieties, from five persons, $1 gratuity; Groveland, 4 plates, 3 varieties, from three persons; Hamilton, 6 pl., 6 var., from two persons; Haverhill, 22 pl., 22 var., from one person, $6, premiums; Lynnfield, 7 pl., 7 var., from one person; Lawrence, 9 pl., 8 var., from two persons; Lynn, 407 pl., 71 var., from one hundred twelve persons, $55.50, premiums and gratuities; Marblehead, 18 pl., 18 var., from one person, $4, premiums; Manchester, 3 pl., 2 var., from two persons, $3, premiums;

Methuen, 6 pl., 6 var., from one person ; Salem, 91 pl., 35 var., from eleven persons, $3 premiums ; Swampscott, 24 pl., 17 var., from three persons, $1, gratuity ; Salisbury, 3 pl., 3 var., from one person ; West Newbury, 10 pl., 10 var., from one person, premium, copy of the Birds of New England ; Wenham, 2 pl., 2 var., from two persons, $3, premiums.

There was one exhibitor of 41 varieties, two of 30, one of 29, one of 21, one of 19, two of 18, two of 17, two of 15, one of 14, two of 13, two of 11, three of 10, two of 9, two of 8, nine of 7, fourteen of 6, thirteen of 5, sixteen of 4, twenty of 3, thirty-four of 2, and fifty-two of 1 ; to whom premiums and gratuities were awarded as follows :—

For best dish of twelve specimens of any of the varieties recommended by the society for cultivation in Essex county, first premium, $3 each,—Bartlett, Breed & Co., Lynn ; Belle Lucrative, L. Newhall, Lynn ; Buffum, E. F. Webster, Haverhill ; Beurre Bosc, Alden Choate, Lynn ; Beurre Clairgeau, Albert Kimball, Bradford ; Beurre d' Anjou, do.; Duchess d' Angouleme, Hugh McManus, Lynn ; Dana's Hovey, J. Henry Hill, Amesbury ; Beurre Golden of Bilboa, John Price, Manchester ; Lawrence, Moses Norris, Lynn ; Louis Bonne de Jersey, B. G. Ladd, Bradford ; Maria Louise, George B. Currier, Lynn ; Onondaga, E. F. Webster, Haverhill ; Paradise d' Automne, H. Alley, Wenham ; Seckel, Josiah Fitz, 3d, Lynn ; St. Michael Archange, Patrick Tracey, Salem ; Sheldon, Wallace Bates, Lynn ; Urbaniste, Breed & Co., Lynn ; Vicar of Winkfield, Edwin Bates, Lynn ; Winter Nelis, John B. Tolman, Lynn.

For twelve best specimens of other varieties worthy of premiums, $1.50 each—Beurre Hardy, Geo. B. Collins, Lynn ; Howell, Moses Rich, Lynn ; Beurre Superfin, John V. Stevens, Peabody ; Doyenne du Comice, George B. Collins, Lynn.

For best dish of twenty-four specimens, premium $6. Beurre Clairgeau, Alfred Cross, Lynn. Second best dish, twenty-four specimens, premium, copy of Birds of New England,—Beurre d' Anjou, T. C. Thurlow, West Newbury.

For the best collection of the largest number of varieties recommended for cultivation in Essex county, premium $8, Alfred Cross, Lynn. Second best of the largest number, premium $6, Peter Wait, Danvers. Third best of largest number, premium $4, Benjamin P. Ware, Marblehead.

Gratuities of $1.50 each, for Beurre Clairgeau, S. T. Goodwin, Lynn ; Seckel, George B. Collins, Lynn.

Gratuities of $1 each, for Beurre Bosc, B. P. Calley, East Saugus ; Beurre Clairgeau, H. Downing, Lynn ; Bartlett, do.; Duchesse d' Angouleme, Edwin Bates, Lynn ; Louis Bonne de Jersey, C. B. Haven, Peabody ; Beurre Bosc, M. S. Andrews, jr., Essex ; Onondaga, Wallace Bates, Lynn ; Beurre d' Anjou, Edwin Bates, Lynn ; Sheldon, John H. Crossman, Swampscott ; Urbaniste, L. Newhall, Lynn ; Winter Nelis, Albert Kimball, Bradford ; Beurre Superfin, do.; Onondaga, John V. Stevens, Peabody.

Assorted dish, W. B. Allen, Lynn, gratuity of 50 cts.; for Beurre Clairgeau, A. J. Hubbard, Peabody.

The Committee, four to one, are in favor of discontinuing the Buffum pear on the list for premiums, on account of its inferior quality, and recommend, instead, Beurre Superfin. We recommend, also, the Howell, and the Souvenir du Congress, to be added to the list for premiums, they being varieties that are worthy of the same.

The pear is a native of the old world. According to very authentic accounts, it has, from the most remote ages been there cultivated wherever soil and climate favored its growth.

The pear was grown in the beautiful gardens of the Hesperides, long before the beginning of the Christian era, and its excellence was not at all unknown to the ancients. It is even probable that the pear grew side by side with the apple and other fruits in the garden of Eden, where the first man and woman, before their fall, ate unsparingly of the delicious fruit.

Shortly after the discovery of the new world, the pear, following in the wake of advancing civilization, found its way to our shores. Though not indigenous to our clime it nevertheless

prosperously thrived, so much so, indeed, that we are informed on good authority that we grow as fine specimens as are grown in the artificial gardens of Paris.

It is only a few years since the pear began to be regarded with anything like favor by the people in general. At first, owing to its scarcity, very many knew nothing about it, and even in our day there are, I venture to say, living within five hundred miles of Boston, thousands who never saw a pear. In our own Essex county, where the pear is so well known and seemingly extensively cultivated, there are not pears enough raised to give four quarts to every family within its territory. This ought to be encouraging to persons desiring to cultivate the fruit for pecuniary profit, the more so as the demand therefor is great. Those who consumed but one quart last year will want at least two quarts this year. The taste will increase for it from year to year, till it will find its way to the table of the poor as well as to the table of the rich.

The rapid increase of our population in every town and city will create a still greater demand, hence, it may not be rash to predict that the pear is destined to become widely known and loved, and finally indispensable as an article of diet. Our chairman once asked a friend of his, who had just bought a lot and built a house on it, to set out some pear trees, grape vines, etc. "Pears!" said he, "what do I want pears for?" He told him that if he did not want to eat them himself, his children assuredly would, and enjoy them, and would thereby be prevented from hankering after those of others. He moreover suggested that it would be for himself a strong preventive against the dramshop to employ his leisure time improving and nursing them. Ultimately, after four years persuasion, on condition that he would warrant the trees to live, and plant them himself, he yielded, and in the spring of 1872 he set out for him the required number. About the middle of last August he invited him to come and see his pear trees. He went. They were loaded down with fine pears. "There," said he, "one hundred dollars apiece would not buy these trees." His

only regret was, that he had not planted them four years before as he advised him to do. His children, too, now rejoice that they have pears of their own.

We occasionally meet laborers and mechanics who, by industry and prudence, save enough to build for themselves neat, comfortable homes, and much enhance the beauty and attractiveness of these homes by planting around them pear trees, grape vines, etc. This is a step in the right direction towards improvement, and our committee earnestly wish that every man in the county, owning a plot of ground, would catch the same fever, so that all may enjoy this delicious fruit. We see nothing to prevent it, since almost every foot of soil in Essex county is well adapted to the growth of the pear. Therefore, every man, having even a half-acre lot under his control, can raise his own fruit. Apples, pears and peaches can be grown here to perfection, and if not disposed of otherwise can be canned, and thus preserved the whole year round. Now, as we are a bilious people, that is, many of us are thus disposed, we think there is no better preventive against the disease than the constant use of wholesome fruit as a part of the diet. It contains acids and juices which greatly assist the stomach to regulate a healthy digestion. It purifies and strengthens the blood, and thus gives a healthy tone and vigor to the whole constitution. There is no other kind of food, too, so conducive to the promotion of chastity, morality and all the nobler virtues in people than good, ripe fruits, far better than the products of the butcher's cart.

Therefore, we would strongly recommend to all who can, the advantage of raising pears, etc., both for their own use and for pecuniary profit. Then, too, there is a pleasure and profit in giving some to our poorer friends who cannot raise pears for themselves or conveniently buy any. Large and small owners of land, who have no pear trees, are not aware of the treasure hidden from them, yet within their reach, nor are they aware of the pleasure derived from planting and nursing the pear, watching its growth and development, and plucking there

of the rich fruit from the drooping limbs. This is real enjoyment which can scarcely fail to exercise a beneficial influence upon the health and habits of persons who devote their leisure hours to this branch of industry.

Mr. Isaac H. Kelly, of Haverhill, says that about ten years ago, a lady neighbor of his was suffering from general debility, and to all appearances on the point of death. He sent her some ripe Beurre Clairgeau pears. They seemed to have a wonderfully reviving effect on the debilitated lady, who continued to use them till she was finally restored to perfect health. To Mr. Kelly belongs the credit of first fruiting the Beurre Clairgeau pears in Haverhill. Our committee are of opinion that all fruit growers should raise their trees from the seed. They have come to this conclusion for various reasons. First, as animals are improved by breeding from pure and healthy stock, why not apply the same rule to the raising of trees from pure and healthy seed ? Second, every one who has had any experience with trees sold by nursery agents can tell the loss sustained from that source. Some of these trees we have known to struggle for existence two or three years and then die ; others not to live through the first season, and some that did not put out at all. This, to say the least, must be aggravating to the purchaser, who wastes his money and labor in setting out worthless plants raised from worthless seed grown on diseased trees. In western New York, where this wholesale business is generally done, there is seemingly but very little regard paid to the future health, thrift and fruitfulness of the plants. On the contrary, they raise from anything and everything that bears pears, and force the trees along, somewhat after the manner that some manufacturers shove shoddy shoes into the market, and that is the end of it with them. We have every reason to believe that trees thus propagated from varieties affected with disease, will, sooner or later, fall a prey to its destruction.

The chief object of raising trees from the seed is to obtain

stocks for budding or grafting, as it is well known in pear culture that no variety will re-produce itself from the seed. Hence, the resort to artificial methods for propagation. The first step to be taken towards this is, to select for seed the best specimens when fully ripe, grown on sound, vigorous and healthy trees; when this is done, place the fruit in a box and leave it until decay reduces it to a pulpy state, then wash out the pulp and dry the seed by spreading it thin on a board and turning it over occasionally, as you would any seed. If the soil or ground is naturally dry, deep and rich, the best time to plant the seed is in the fall, in drills three feet apart. This distance will admit of going between them to keep the soil pliable and mellow when the plants are up. When the drill is made, open it with a hoe about five inches wide and three deep, then drop the seed and draw over it with the hoe the fine pulverized earth as evenly as it can possibly be done. A top dressing of decomposed stable manure, or partly decayed leaves, to the depth of an inch or so, should be applied. This will prevent the surface in early spring from baking or cracking, which will help the plants to come up readily, strong and vigorous. The covering on the seed should not be too deep, not over three inches including the top dressing.

Care must be taken that they be not in any way stunted, either by any obstacle in the way coming up through the soil, or by weeds and neglect afterwards. Seedlings stunted in the early stages of their growth, never make sound, thrifty, healthy trees, and therefore should never be planted. If they come up too close together, they should be thinned out when four or five inches high to regular distances, about ten inches apart. When left too thick they grow up slender and feeble, and consequently unfit for further use. As one strong seedling is worth twenty poor ones, we must therefore see the importance of thinning out all the weakest plants. Pear seedlings of one season's growth must be taken up late in the fall, before the ground freezes, and packed close together. Having no side roots to hold them in the soil, they cannot stand the severity

of the hard blasts of winter. The best place to keep them is a dark, cool cellar, where frost will not touch them. In transplanting them in early Spring, when the ground is fit, cut back a portion of the tap roots, and shorten the stem correspondingly. Set them out two feet apart in drills, which will give them ample room to throw out lateral roots, and grow strong and stocky. We know of a party in Bradford who lost several hundreds of pear seedlings by leaving them in the ground the first winter. If a strong, vigorous growth is obtained after transplanting, they will be fit to bud the same season, about the middle of August. Now, then, having procured good healthy stocks to bud on, it will be also necessary to procure good, sound, healthy buds. This can be easily done by selecting from the varieties that are to be propagated, strong, vigorous shoots, free from any disease. Pinch off their tip-ends and let them grow until wanted. This will hasten the development of the buds, and they will be in good condition to use in about two weeks. None but the most prominent buds should be used under any circumstance, as it is this little bud that is inserted under the bark of the stock, that becomes in future the standard tree. Budding is simple enough when rightly understood, but to meet success it must be done right. The first thing to be done in performing the operation, is to remove from the stock any shoots that would be apt to interfere with the insertion of the bud; then with the budding knife make two incisions in the stock, one horizontal and the other perpendicular, in the form of the letter T, about two or three inches from the ground; strip off the leaves from the bud shoot, but leave a portion of the leaf-stock attached to the bud to handle it with. In cutting the bud off hold the shoot in one hand and the budding knife in the other; enter the knife half an inch above the bud and draw it down parallel with the shoot and bring it out three-quarters of an inch below the bud. Care must be taken to make a clean cut and not to take off any wood with the bark. But if a little should be taken off, see that it adheres firmly to the bark, as ragged bark and little slivers of

wood hanging to the bud will never do. Use the end of the handle of the budding knife to raise the bark gently on the edges of the perpendicular cut, then the bud may be inserted under the bark, and care must be taken that the piece of bark attached to it be cut square at the top, so as to fit snugly to the bark on the horizontal cut, tie with palm leaf or such as is used in cane-seat chairs. Success in this operation will depend entirely on clean cutting, good fitting and good tying. Budding should be done on the north or east side of the stock, because thus the stock will partly shade the bud. Too much exposure to the sun's heat during August and September is apt to interrupt the process of healing by curling the tender bark on the wound, and perhaps cause budding over again. In about four weeks, if the bud has caught, the strings may be removed, to save the bark from denting.

The following spring after budding the seedling, that is if the bud is all right, rub off all the shoots appearing on the stock, so as not to impede the growth of the bud. During the latter part of July or the first of August all above the bud of the stock may be removed, by making a sloping cut clean and smooth and close to the bud, but not so close as to cause any injury to it. Now we will go to work again on the seedling the next spring, that is, the second spring after budding, at which stage the tree is one year old from the bud. All further treatment comes under the head of pruning, as here comes the time to commence to give it shape and form. The first question comes, then, what distance from the ground should it branch out and grow stocky? There is no definite rule, that we are aware of, on this point, as some people prefer tall trunks while others prefer low ones. However, we are of opinion that no standard pear tree should have a branchless trunk above three feet from the ground. This in a manner gives the tree the advantage of shading itself from a hot, glaring sun, and is a safeguard, in a measure, from high winds. We are also of opinion, from a little experience, that the pyramid or umbrella shape is the handsomest and best form that

can be adopted, not on account of its beauty alone, but it admits readily sun and air through the branches. During the second season's growth of the young tree, the small shoots on the stem or trunk should not be taken off, as they retain the sap in the lower part of the stem, which will give it a stout body. But they must be kept within bounds and not allowed to grow too long, by pinching often through the season, as allowing them to grow too fast would check the growth of the leader. Late in the fall, or early the following spring, all the side shoots should be removed and a branchless trunk formed to three feet from the ground, as already spoken of.

To form the pyramid or umbrella shape, all straggling and tender side branches must be watched closely as they grow long and weak, and draw the sap from the leader ; pinching off the ends of all such will regulate an equal circulation, which will cause every branch to grow stocky and strong. Let every shoot, commencing with the lowest, be about ten inches shorter than the one next above it, and so on to the top, and allow no surplus shoots to grow. Thus is obtained the fine symmetry of the perfect tree and a uniform growth on every limb.

What can be more repulsive to the eye than to see gardens encumbered with tall, straggling skeletons, unshapely and unfruitful, packed closely together, that afford no pleasure to the passer-by, nor remuneration to the owner for his outlays. Most trees have a natural tendency to grow tall without acquiring proportionally a stocky body, and very often, for that reason, the tree bends under its own weight, and hence the necessity to resort to propping it up. To avoid this altogether, prune, and let the sun and air circulate freely through the tree, that every branch may have ample room to fulfil its functions properly. It is well known to all fruit growers that the most perfect specimens of every kind of fruit grows in the sun not only perfect, but their skins are smooth and glossy, and brilliant in blush. This will give us an idea about pruning, and what to prune, and how to prune. A little experience and

study will enable most any one to acquire this knowledge, which should be strictly practiced on every fruiting tree.

Having said all that we think necessary on raising pear trees from the seed, budding, pruning, etc., we will take up grafting, the influence of stock on scion, and *vice versa*, preparing soil, transplanting, etc. This whole subject was suggested to us by Mr. D. W. Low, of Gloucester, who scarcely left us anything else (relating to the pear) to write on, after his instructive report to the society last year, on the general management of the pear.

Grafting is a science long known in fruit culture, and various modes of grafting are practiced in different countries. The French, it is said, have no less than fifty, and excel all others in the art. The most prominent modes in vogue with them, however, are whip, root, splice, skin and cleft grafting; their other modes are principally experimental. The object of grafting is similar to that of budding—to multiply varieties that cannot reproduce themselves from the seed, though it is often performed with other objects in view, such as obtaining a new variety quicker than by any other mode. A scion inserted in a bearing tree will hardly ever fail to produce the third year, but this cannot be said with the same operation on a seedling; it will show no sign of fruiting in that time. Therefore, we must see the importance of having older trees, and of the strong growing kinds for stocks to accomplish the object successfully; the slow-growing kinds are never apt to bring good results.

Crossing two healthy varieties of the pear family cannot but work very important influences on both (scion and stock) in producing fine fruit, as we have seen the Bartlett grafted on the Doyenne Boussack, the Dutchess on the Buffum, the Beurre d'Anjou on the Onondaga, Clapp's Favorite on the Flemish Beauty, to produce very fine and extra large specimens. The society has paid a premium two years in succession on specimens of the Beurre Clairgeau pear grown from grafts on a Flemish Beauty stock. The Flemish Beauty, Beurre Diel, Doyenne Boussack, Doyenne White, Buffum and Vicar of

Winkfield make most excellent stocks for most all other varieties.

Grafting is performed by inserting a scion of one variety on the branch of another, called the stock, and trees of all ages can be grafted successfully, if they be sound and healthy, and the scions also. Scions are shoots of the previous year's growth, and should be cut in February and tied up. The butt ends should be cut square, then placed standing in some part of the cellar floor where it is a little moist. Scions thus treated are kept dormant until wanted, with no shriveling of the bark, and will be in an excellent condition to use. They should be taken from the upper branches of thrifty and hardy trees well matured. Scions bearing fruit buds should not be used, and a medium size scion is better than one half an inch in diameter, pithy and unripe. The implements used in grafting are very simple; the grafting knife with chisel attached, saw, and a sharp knife to prepare the grafts with. There are various opinions expressed in regard to what is the best composition to be used in grafting. This subject was once extensively discussed before the Bradford Farmer's Club. Some preferred a composition made from bees-wax, tallow and rosin, equal parts. Others substituted linseed oil for tallow, with less bees-wax and more rosin than of either. But the majority, from long experience, concluded that there was nothing equal to a simple composition made from fresh cow manure and brick-clay; one-third manure to two-thirds clay is about right to use. It will adhere firmly to the wound until it is all healed, and retains moisture, which is requisite during the process of healing; when it falls off it leaves the bark on the wound healthy, fresh and smooth; in fact, it is nature's own remedy and we have never known it to fail. On the other hand, a composition made from oily substances must be injurious to the tree, as it is foreign to its nature, and hence it cannot but interrupt, in a great measure, free circulation and impede progress in healing. Aside from grafting, we believe that oil or grease should not be applied in form to a tree, and in grafting, if the other agents

used in the compound did not counteract the action of the oil on the wound, the wound would never heal.

Of the several modes of grafting spoken of in our introductory remarks on grafting, we shall only recommend two for practical use, viz.: Skin and Cleft grafting. Having everything in readiness, composition, scions, implements, strips of cloth, thread to tie with, etc., Skin grafting is performed after this fashion:—Saw off the stock horizontally with a fine tooth saw, clean and smooth; and cut the scion on one side, about an inch and three-fourths long; make a shoulder at the top of the cut on the scion, and a slit in the bark of the stock to admit it. Care should be taken that the slit in the bark of the stock does not exceed in length the cut on the scion; raise the bark from the stock and insert the scion between the bark and wood; have the shoulder rest on the stock; then apply the composition all over the wound, wrap a strip of cloth (cotton) about three inches wide around it firmly two or three times and tie with small thread. We have heard objections to this mode of grafting, on account of the graft being blown off before growing firmly to the stock. Nevertheless we have tried it with success, and found it makes a strong perfect union, when the scion has grown as large as the stock. Cleft grafting is performed by sawing the stock, as in skin grafting, clean and smooth; then the stock is split by holding the grafting-knife in the centre and striking lightly with a hammer, use the chisel on the knife to keep the split open until the scions are inserted, one on each side; cut the scion in the shape of a wedge to fit snugly the split in the stock, and have a bud on it close to the stock on the outside; when this is done insert the scions firmly in the stock, and see that the inner barks of both scion and stock comes in perfect contact; then apply the composition, as in the case of skin grafting, and fill every crevice to exclude air and rain water; wrap a strip of cloth two or three times round it, and tie with thread as in skin grafting; success will depend on good fitting and clean cutting.

In large stocks an inch and a half in diameter or more, two

scions should be inserted, but if both grow, one should be removed when they get close together, as the wound on the stock will then be healed and only one is needed. Prune back the growth on the scion the following Spring so that it may grow stocky, and throw out shoots close to the stock, to form a new head for the tree. Grafted trees should be watched closely during the growing season, as they throw out immense quantities of suckers, which if left to grow will almost starve the young grafts. These should be checked as fast as they appear, though it is necessary to leave part of the branches on the stock to balance growth. They may be removed altogether the second or third season, or according to the size and growth of the tree. A little experience will teach how to regulate this.

REMARKS ON SOILS, PLANTING THE TREES, ETC.

The most desirable soil for pear trees is deep loamy soil, not alone in producing thrift and fruitfulness, but the fruit grown on such soil is par excellence in flavor and nutrition. There are other soils, such as sandy and clayey soils, that by judicious treatment might be made available for pear culture. Mixing ashes, clay, or muck, with sandy soil will be a great improvement, as these agents retain moisture and the soluble parts of manure, that will enable plants to stand the drouth better.

Clayey soil of itself makes very poor soil for all kinds of fruit trees, as in dry season it bakes hard and cracks, rendering it too impervious to that best of all plant food, the cool dews of night, in the Spring and Fall, and after heavy rains sticky mud not fit for trees to stand in.

The most proper way to improve such soil is first to tile-drain it, then to incorporate with it sand, muck, coal or wood ashes liberally. All kinds of soil for fruit trees should be dry, either naturally or made so by the system of drainage.

In preparing soil for planting trees, plow eighteen inches deep or thereabouts, bringing the sub-soil on top. This can be accomplished by going twice in the same furrow, first with a common plow then with a sub-soil. Small gardens, where the

plow cannot be used, can be dug with a spade any required depth by trenching, which should be done in this manner: commence on one side and open a trench two feet wide or so, and in depth as recommended for ploughing; carry off to the opposite side the dirt taken out of it (to be used in filling the last trench), then open the next and throw the surface soil into the bottom of the first and subsoil on top, and so on until the whole garden is trenched. In all cases for fruit trees, grape vines, etc., this depth is essential, as the roots will certainly go that distance downwards in search of food. If not ready to plant when your trees arrive, heel them at once, by opening a trench deep and wide enough to admit all the roots, being careful to cover the roots well to exclude air. When ready to plant take off all bruised roots and mutilated branches, making a clean slanting cut every time, and cut back the last year's growth to two or three buds. Make the hole somewhat larger than is necessary to admit of all the roots in their natural position, and throw out the surface in one pile and the subsoil in another. Sink the hole about two feet and a half deep, round it up with surface soil, and have three inches of the trunk above where the roots branch out covered, on a level with the surface. A great many trees are spoiled by both deep and shallow planting. To set a tree to the proper depth, use a narrow strip about five feet long, lay it across the hole on the surface; then set the tree in the hole, measure three inches from where the upper roots branch out on the tree, to the under side of strip, work pulverized surface soil between and under the roots with the hand; stretch out every little fibre carefully, and when the roots are well covered tramp down hard so that the tree will stand as firm as a post; spread the subsoil on top light and loose.

Trees should be set leaning a little towards the north-west, as most of our heavy gales blow from that direction, and young trees with heavy tops cannot resist their forces. Consequently we see a great many in our travels leaning towards the east or south-east, when from seven to ten years old. Use

no manure in contact with the roots, and mulch, especially during the first season, with coarse straw, salt hay, or corn stalks; this will keep the soil cool and moist round them, and prevent injury from drouths in dry seasons. The proper distance apart for pear trees in orchards is about twenty feet each way, but this distance cannot be well adopted in small gardens. We very often see one tree growing under the shade of another, but the result is, tall, straggling skeletons, without shape or form and as a rule unproductive. In cases of this kind it is better that one tree should occupy the whole space taken up by two, as the yield thereby would be improved in quantity and quality, to say nothing of the general welfare of the tree. In all cases give them plenty of room, good deep, dry soil, clean culture, severe pruning, and success will be the reward. We very often hear some persons recommend, when planting trees, to fill up the bottom of the holes with old shoes, glass bottles, pieces of scrap iron, tin cans, old crockery, and any kind of rubbish, but for what purpose we have yet to learn. It may be safely said that none of these articles named contain any plant food, and furthermore we believe that such rubbish would greatly interfere with the roots taking a firm hold in the soil. This rubbish must work up towards the surface by the action of the frost, the same as stones, which would be a great nuisance in a garden until removed.

We wish to offer a few remarks on the so-called fire-blight, the most dangerous disease that the pear tree is heir to, but whether it is caused by the sudden changes of the atmosphere, imperfect drainage, or heavy manuring remains, in a measure, to be proved.

The disease makes its appearance at different periods, sometimes in early Spring before the trees put out, and through June and July, long after the leaves are out, attacking the branches first. We believe that heavy manuring has everything to do with this disease, as stimulating the soil too highly with rich manure forces immature growth, which cannot stand the changes of our climate without injury. Mr. Richard

Webster of Haverhill, says that he has been almost entirely exempt from this disease in an orchard of over four hundred pear trees. He laid it down to grass seven years ago, and it has borne heavy crops of fine hardy fruit most every year since. He also says that his orchard has had no top dressing of any kind during that time, which is a strong argument against heavy manuring. We have said, and believe it, that over manuring and imperfect drainage are some of the causes that produce the blight; still there are other agents that work death to all kinds of fruit trees, and that is growing corn, oats, barley or rye between and around them, especially corn, which draws from the soil its woody substance, or materials; robbing the trees of that which by nature belongs to them. This is proved by the present appearance of a once beautiful pear orchard of some one hundred trees or more, owned and cultivated by Mr. Albert Kimball of Bradford. This orchard was set out in 1864, and has been planted to our knowledge with corn almost every year for the last ten years, and growing every year a heavy crop of that produce; but what has been the result? The trees made a fine growth during the first eight years, and after that Mr. Kimball began to lose some of his trees from the blight, and kept losing more and more every year, till this season, when the destroyer made a wholesale sweep, leaving in its march but very few of what might be called sound trees in the whole orchard. We must ascribe this to being planted with corn so long rather than to heavy manuring, though it is well known to fruit growers that trees grown in rich soils are about the only ones affected with the disease. Any kind of plants that make a hard, woody fibre, like corn, rye, &c., should not be grown around fruit trees, as such plants being fast growers take to themselves most all the woody particles in the soil at the expense of the trees. We hope to obtain the experience of others on this point, in next year's report, as it is a question that interests every fruit grower, throughout the country.

Before bringing this report to a close, we would ask permis-

sion to stray away from our subject for a moment, and call attention to those unsightly stumps, called apple trees, that line our thoroughfares, and take up much valuable room in fields and orchards. We have reference to those seen as if ready to tumble down, having hollow trunks surrounded with root suckers, white branchless limbs, and gray with age all over. Such trees, in our opinion, ought to have long since found their way to the wood pile, to make room for others more beautiful and profitable. Clear away along the stone walls, also, and burn up all the rubbish. Then may it be said of us, that we have well filled our sphere in cultivating the soil, and left it better than we found it.

John O'Brien, *Chairman*; John Preston, G. W. Gage, James A. Teel—*Committee.*

APPLES.

The more experienced and efficient members of the Apple Committee were unable to be present, making the labor of the untrained remnant severe, and the results unsatisfactory to them and probably to many of the exhibitors.

The show of apples was very fine, for the off year, especially considering the very large crop of last year. It would be interesting to know whether or not the trees, which produced the fruit shown, bore last year, and if so, the state of cultivation they were under.

There seems yet to be a question as to the possibility of changing the bearing year, and whether or not there are off-year bearing stocks which, if budded or grafted from, would continue to produce on the off-year. The general subject of apple growing, including the above, and questions as to the influence of the stock on the scion, variations in varieties, &c., might profitably be a subject for discussion at one of our society meetings, lately established. Should it be brought up, it is

hoped that every one interested will be prepared to contribute toward the settlement, if possible, of some of the still mooted points.

There were 106 exhibitors, showing 370 plates. Of the 110 varieties, the leading ones were represented as follows:—

Baldwin,	46,	Golden Russet,	3,
Hubbardston,	37,	Twenty Ounce,	3,
Roxbury Russet,	20,	" Bradford Nonsuch,"	3,
Gravenstein,	16,	King of Tompkins Co.	3,
Porter,	15,	President,	2,
Danvers Winter Sweet,	13,	Drap d'Or,	2,
R. I. Greenings,	11,	Pumpkin Sweet,	2,
Northern Spy,	10,	Tallman Sweet,	2,
Minister,	9,	Gilliflower,	2,
Fall Harvey,	6,	Ribston Pippin,	2,
Famense or Snow Apple,	5,	" Creasy,"	2,
Sweet Baldwin,	5,	Crabs,	15.
Kilham Hill,	4.		

The following premiums and gratuities were awarded:—

FIRST PREMIUMS.

Baldwin, S. B. George, Groveland, $3; Danvers Winter Sweet, Frank Perkins, Newbury, $3; Drap d'Or, S. F. Newman, Newbury, $3; Hubbardston Nonsuch, Thomas G. Ordway, West Newbury, $3; Porter, Breed & Co., Lynn, $3; Pickman's Pippin, Mrs. N. J. Warren, Marblehead, $3; Red Astrachan, J. Henry Hill, Amesbury, $3; Roxbury Russet, F. P. Todd, Rowley, $3; Rhode Island Greening, Mrs. N. J. Warren, Marblehead, $3; Sweet Baldwin, John C. Vennard, Lynn, $3; Gravenstein, J. Henry Hill, Amesbury, $3; Hunt's Russet, S. B. George, Groveland, $3.

Any other Variety.

Snow Apple, G. P. & H. E. Goss, Lynn, $1.50; Red Canada, Thomas C. Thurlow, West Newbury, $1.50; Spitzenburg, Thomas C. Thurlow, West Newbury, $1.50.

Collections of Apples.

Best collection, J. Henry Hill, Amesbury, $8.00
Second collection, Peter Waite, Danvers, $6.00.
Third collection, John W. Allen, Newbury, $4.00.

Twenty-four Specimens Apples.

Best, Gravenstein, J. Henry Hill, Amesbury, $6.00.
Second, Baldwin, T. C. Thurlow, West Newbury, Birds of New England.

Crab Apples.

Hyslop Crab, Amos K. Noyes, Lynn, $1.50.
Montreal Crab, J. Henry Hill, Amesbury, $1.50.

Collection of Crab Apples.

Z. C. Wardwell, Groveland, $5.

GRATUITIES.

Danvers Winter Sweet, C. H. Buxton, Salem, $1.
King of Tompkins Co., Daniel Plummer, Newbury, $1.
Merrimac Sweet, Alfred Green, Salisbury, $1.
Gravenstein, F. J. King, West Newbury, $1.
Gilliflower, Frank P. Todd, Rowley, $1.
Rhode Island Greening, Joseph Horton, Ipswich, $1.

E. P. Richardson, *for the Committee.*

PEACHES, GRAPES AND ASSORTED FRUIT.

PEACHES.

Best White Flesh, $2, to Edmund Gale of Amesbury.
Best Yellow Flesh, $2, to J. Henry Hill of Amesbury.
Best Seedling, $2, to Susan M. Jenkins, Lynn.
Best Collection of Peaches, $3, to E. F. Webster, Haverhill.
Gratuity, 50 cents, to Sylvester Parrott of Lynn.
Gratuity, $1, to P. M. Neale, Lynn.
Gratuity, $1, to Mrs. Wm. F. Hill, Lynn.

GRAPES.

Premiums of $3 each for Best Concord, Geo. W. Gage, Methuen; Hartford Prolific, Charles E. Pecker, Lynn; Isabella, Edward Todd, Lynn; Delaware, Z. C. Wardwell, Groveland; Iona, Augustus Very, Danvers; Creveling, Augustus Very, Danvers; Clinton. W. F. Newhall, East Saugus; Diana, Samuel Porter, Lynn; Adirondac, F. Batchelder, Lynn; Eumelan, B. G. Ladd, Bradford; Rogers, No. 3, Geo. W. Gage, Methuen; Rogers, No. 15, Augustus Very, Danvers; Rogers, No. 4, Edwin Sheldon, Lynn; Salem, H. C. Whippam, Lynn; Rogers, No. 39, George W. Gage, Methuen.

Best Cold House, $6, Wm. E. Lovejoy, Lynn; 2d best, $4, J. M. Teel, Lynn.

Best Collection, $7, George W. Gage, Methuen; 2d best, Birds of New England, J. W. Ropes, Danvers.

Best Seedling, $1.50, Geo. W. Ladd, Bradford.

Best Brighton, $1.50, Timothy Jones, Peabody.

Best basket Assorted Fruit, $4, Peter Wait, Danvers; 2d best, $3, A. J. Hubbard, Peabody.

GRATUITIES.

Wm. F. Vining, Amesbury, $1; J. W. Ropes, Danvers, $1; Chas. B. Smith, Upper Swampscott, $1; Sylvester Parrott, Lynn, 50 cents; P. M. Neal, Lynn, $1.50; Mrs. Wm. F. Hill, Lynn, $1; Samuel G. Ashton, Lynn, 50 cents; Lucius Newhall, Lynn, 50 cents; John W. Blaney, Lynn, 50 cents; Aaron Low, Essex, $1; George W. Pettingill, Salem, $1.50; J. Henry Hill, Amesbury, 50 cents; P. M. Neal, Lynn, $1.50; Walter B. Allen, Lynn, $1.50; Henry G. Hawthorn, Lynn, $1.50; B. G. Ladd, Bradford, 50 cents; John O'Brien, Bradford, 50 cents; Alfred Green, Salisbury, $1; J. Henry Hill, Amesbury, 50 cents; Chas. F. Rhodes, East Saugus, 75 cents; M. S. Andrews, Jr., Essex, 50 cents; Everett M. Twiss, Peabody, 75 cents.

THOS. C. THURLOW, *Chairman.*

FLOWERS.

The Committee on Flowers report that the exhibition of plants and flowers was highly satisfactory, and the favorable comments by the numerous visitors were good evidence that this department of the exhibition was highly appreciated.

The display of pot plants from the greenhouses of John Wooldredge, Esq., of Lynn, was undoubtedly the best the society have had. To enumerate them would require more time and space than can be expected. The plants were well grown and reflected great credit on the gardener, Mr. C. M. Callahan. The collection consisted of specimens of Palms, Dracœnas, Ferns, Caladiums, and other choice plants. The handsomest pot plant came from the same place ; also, the best variegated leaved plant; the first, a good specimen of Clerodendron Balfourii, a beautiful climbing plant, the flowers being white with scarlet centre ; the second a very nice specimen of Cissus Discolor, a most beautiful climber, the leaves being very richly colored.

The collection of William Miller, of Swampscott, contained some nice specimens of Agaves, Begonias, and other choice plants, and although the collection was smaller than that of Mr. Wooldredge, they well merited the second prize.

The parlor and hand bouquets were very handsomely made ; they were all that could be expected, the flowers were choice and the arrangement very tasty.

The Floral designs showed excellent taste in the arrangement, and either one would have been a handsome adornment for any room. The one from Mr. Hålliday, which received the first prize, was unusually good and reflected great credit on the exhibitor.

The Dahlias were all good, and it is a great satisfaction to see this old flower again brought into so prominent a place among our fall flowers ; they well deserve a place in every garden. The twelve Bouquet Dahlias from Mr. J. F. Marble, of Lynn, were as good as ever have been shown, and the exhibitor deserves great credit for the care he has taken in the making of so choice a collection.

The Gladiolius were also unusually good; the twelve from John Wooldredge were very fine indeed. The ease with which they are cultivated make them a valuable addition to every garden, and by planting a few bulbs every week from May to July a succession of bloom may be had the whole season.

Petunias and Verbenas, there were none worthy of special mention, but we venture here a suggestion; that instead of a prize for the best twelve flowers of either, it should be for the best twenty-four bottles in bunches of three in a bottle, the prize to remain the same, $1. They are easily cultivated, and there would be no difficulty in getting that amount of bottles well filled.

Pansies, it is too late in the season to expect even a fair display.

Native flowers, the display by Miss Julia Tracey, was an unusually good one; they were very neatly arranged and all plainly and correctly named, and afforded the lover of our native flowers an opportunity seldom offered to become acquainted with the names of what are often seen, and seldom known only as wild flowers. It was a rich treat, and we think we are safe in saying, was highly appreciated, but the premium of $2 is entirely inadequate for any collection like the one just mentioned. What we say of Native Flowers will apply equally to the splendid collection of Native Fruits from Miss Susie Tracey. There were fifty varieties, and your Chairman does not remember of ever seeing that number together at any exhibition. Too little attention paid to the study of our native plants, and we trust that the exhibition of the Misses Tracey may stimulate others to take up this very interesting study. Our whole county is rich in native flowers and ferns, and what way could the spare time of our young ladies and gentlemen be better spent? Let us hope many may try it.

Zinnias, Mr. J. J. H. Gregory was the successful competitor, with twelve very nice flowers in a good variety. This is one of the best annuals and deserves a place in every garden.

Coxcombs were very fine. W. C. McFoot was the successful competitor.

Drummond Phlox, Marigolds, Sweet Peas, Candytuft, Stocks, Balsams, Nasturtiums and Antirrhinums are all useful annuals, and there were some nice varieties exhibited, but the prize of $1 for the twelve single flowers of each, is altogether too much for flowers so easily grown, and we suggest a change in offering the prizes for such flowers.

There were a few plants exhibited that were not in the collections—a very nice little specimen of the Date Palm, *Phœnix Dactilifera*, from Mrs. Lucy J. Spiller, a fine sweet-scented geranium from C. D. Clapp, a nice box of Lycopodium Denticulatum from James Teel, a very pretty fernery from Mrs. J. Cheever, and a handsome Wardian case filled in a very tasty manner by John Williams of Swampscott.

There were numerous designs and bouquets which added to the appearnace of the Hall, and although they could not all receive a premium, gratuities were awarded in every case where they could be worthily bestowed.

It is a great satisfaction to notice a growing interest in the cultivation of plants and flowers. Washington once said that Agriculture is the most healthful, the most useful and noble employment of man, and certainly Horticulture is akin to it, and whoever engages in the cultivation of flowers cannot but feel a more refining influence on their lives by so doing, and we trust that the society will offer every possible inducement to engage in the cultivation of plants and flowers, and in closing this report we would suggest the propriety of printing in the Transactions of the Society each year, a short, practical essay on the cultivation of our most popular and useful flowers, with lists of the same, so as to make them a sort of guide to those who desire to engage in so noble and elevating a project.

Premiums were awarded

For the best pair Parlor Bouquets,	$3	to S. T. Goodwin.
" " " Hand "	2	" Henry Young.
" " Floral Design,	2	" John Halliday.
" " dish Cut Flowers,	2	" Mrs. L. P. Weston.

For the best	twelve large Dahlias,	$1	to	Henry Downing.
" " "	Gladiolus,	1	"	John Wooldredge.
" " "	Petunias,	1	"	Mrs. J. H. Hill.
" "	display Pansies,	1	"	Henry Young.
" "	twelve Verbenas,	1	"	Mrs. N. E. Ladd.
" "	display Native Flowers,	2	"	Miss Julia Tracey.
" "	twelve Double Zinnias,	1	"	J. J. H. Gregory.
" " "	Coxcombs,	1	"	W. C. McFoot.
" "	display Drummond Phlox,	1	"	Mrs. M. P. Guild.
" "	twelve African Marigolds,	1	"	Clara M. Nichols.
" " "	French "	1	"	"
" "	display of Sweet Peas,	1	"	Charles Smith.
" "	varieties of Candytuft,	1	"	Clara M. Nichols.
" "	twelve pot Marigolds,	1	"	"
" " "	Bouquet Dahlias,	1	"	J. F. Marble.
" "	display of Stocks,	1	"	S. T. Goodwin.
" " " "	Balsams,	1	"	Clara M. Nichols.
" " " "	Nasturtiums,	1	"	William Stone.
" " " "	Antirrhinums,	1	"	William Stone.
" " "	mix'd Eternal Flow's,	1	"	Mrs. Plumstead.
"	handsomest Pot Plant,	1	"	John Wooldredge.
"	best Variegated Leaved Plant,	1	"	"

For the largest and best display from one individual, first premium, one copy " Birds of New England," to John Wooldredge. For the second best display, $3, to William Miller.

Gratuities were awarded to

C. H. Andrews,	for Pot Plants,	$2 00
Lucy J. Spiller,	" Date Palm,	50
C. D. Clapp,	" Geranium,	50
James Teel,	" Lycopodium Deiticulatum,	50
M. J. Cheever,	" Fernery,	1 00
Miss Susie Tracey,	" 50 varieties of Native Fruits,	2 00
Mrs. J. Williams,	" Design,	1 00
Mrs. M. E. Fuller,	" " Native Flowers,	1 00
Mrs. M. Plumsted,	" "	1 00

Mrs. J. Williams,	for design,	$1 00
Mrs. M. P. Guild,	" "	1 00
Mrs. N. J. Warren,	" "	1 00
Mrs. John B. Lindsay,	" "	1 00
Miss Mary Noyes,	" Bouquet of Flowers,	1 00
Henry Young,	" Bouquet,	1 00
Mrs. M. Rich,	" "	50
Bertha F. Perkins,	" "	50
Mrs. L. Tarr,	" "	50
Mrs. J. H. Hill,	" "	50
Mrs. L. P. Weston,	" "	50
Mrs. R. Tarr,	" Flat Bouquets,	50
Mary C. Downing,	" Basket of Flowers,	1 00
Henry Downing,	" Flower Stand,	1 00
J. F. Marble,	" Collection of Dahlias,	1 00
N. J. Warren,	" Vase of Native Flowers,	1 00

Amount awarded in premiums,	$35 00
" " " gratuities,	22 50
Total amount awarded,	$57 50
Amount appropriated for premiums,	$43 00
" " " gratuities,	30 00
	$73 00
Amount awarded,	57 50
Unexpended balance,	$15 50

JOHN G. BARKER, *Chairman.*

VEGETABLES.

The Committee on Vegetables report—the whole number of exhibitors in this department of our late fair, at Lynn, was sixty-six, from about twenty-four different towns and cities, their contributions being as follows :—

Kind.	*No. Contributors.*	*Kind.*	*No. Contributors.*
Beets,	11	Oats,	2
Beans,	3	Potatoes,	18
Cucumbers,	7	Parsnips,	2
Corn,	11	Pumpkins,	2
Cabbages,	12	Peppers,	2
Cauliflower,	3	Pickled Cucumbers,	1
Carrot,	7	Radishes,	1
Cranberries,	5	Sunflowers,	2
Eggs,	1	Sage, (green)	1
Garden Seeds,	4	Sweet Marjoram (do)	1
Gourds,	1	Squashes,	24
Lettuce,	1	Tomatoes,	6
Melons,	6	Turnips,	8
Mangolds,	7	Wheat,	1
Martynias,	1	Yams,	1
Onions,	16		

For the above, the following awards were made, viz.:

A. H. Alley, Marblehead, best Hubbard Squash, premium, $3; best Butman Squash, gratuity, $1.50.

J. W. Blodgett, East Saugus, 1st premium, $3, for best Savoy, and 2d premium, $2, for Mammoth Drumhead Cabbages.

John P. Bailey, Marblehead, gratuity, $2, for Hybrid Squash on condition that three squashes, raised from its seed, shall be exhibited at next year's fair.

H. F. Buxton, Peabody, gratuity, $1.50, for Compton Field Corn.

Nathan Bushby, Peabody, premium, $3, for best Parsnips.

M. F. Batchelder, Peabody, Premiums, $3 each, for Short Top Long Orange, and Short Horn Orange Carrot; premiums, $2 each, for Long Smooth Dark Blood Beet and for Muskmelon; 2d premiums, $2 each, for Fottler's Drumhead Cabbage and Cauliflower; and gratuity, $2, for Sweet Herbs.

W. R. Cole, North Andover, Premium, $3, for best Ruta Baga Turnips, and 2d Premium, $2, for Cranberries.

Norman S. Cole, West Boxford, 3d premium, $1, for Cranberries.

Andrew Curtis, Peabody, premium, $3, for late Sweet Corn, in milk, (Stowell's Evergreen).

A. C. Estes, Rockport, premiums, $3 each, for best Early Rose Potatoes and Fottler's Drumhead Cabbages.

Levi Emery, Lawrence, premiums, $3 each, for Turnip Beets and Red Cabbages.

Mrs. Jeremiah Fuller, Middleton, gratuity, $1.50, for very choice looking gherkins, or small pickled cucumbers, in jars.

Alfred Green, Salisbury, 2d premium, $2, for Savoy Cabbages; gratuity, $2, for exhibit of Potatoes and Onions.

J. J. H. Gregory, Marblehead, 1st premium, $8, for best collection of garden seed, 210 varieties; "Birds of New England" for best collection of Vegetables; premium, $3, for greatest variety of Tomatoes, (14 varieties); premiums, $3 each, for best Yellow and Red Flat Onions, best Nutmeg Melon ("Black Spanish"), Water Melon, Cauliflower ("Nonpareil"), and for Early Sweet Corn ("Marblehead").

S. W. Hathaway, Marblehead, 1st premium, $3, for Mammoth Cabbage; 2d premium, $2, for Stone Mason Cabbages; and gratuity, $1.50, for Yellow Danvers Onions.

E. G. Hyde, Danvers, premium, $3, for Purple Top Turnips; 2d premium, $2, for Red Cabbages; gratuities, $1 each, for Early Rose Potatoes and Short Horn Carrots.

John S. Ives, Salem, 2d premium, $6, for collection of garden seed, 198 varieties.

H. N. & A. D. Johnson, East Saugus, premium, $3, for best Field Corn; gratuity, $1, for Pearl Pop Corn.

Allen Lee, Manchester, gratuity, $1.50, for Early Rose Potatoes and Pole and Bush Beans, and $1 for Egyptian Sweet Corn.

Aaron Low, Essex, premiums, $3 each, for best Turban Squash ("Essex Hybrid"), best Round Flat Tomatoes ("Essex Smooth Round"), best dish of any other variety ("Low's New Hybrid").

Wm. Miller, Swampscott, gratuity, $1.50, for Sugar Beets.

Josiah Newhall, Lynnfield, gratuity, $1.50, for Crookneck Squashes.

Asa T. Newhall, Lynn, premiums, $3 each, for best "Marblehead" Squash and Mangold Wurtzels.

Benajah Phillips, Swampscott, gratuities, $1 each, for Yellow Globe Turnips, and for Cucumbers and Peppers, and $1.50 for Melons.

W. W. Perkins, Newbury, gratuity, $1.50, for Danvers Yellow Onions.

E. P. Richardson, Lawrence, premium, $3, for best "Ohio" Potatoes.

H. A. Stiles, Middleton, premium, $3, for best peck of cultivated Cranberries.

Benjamin P. Ware, Marblehead, premium, $3, for best Boston Marrow Squash.

David Warren, Marblehead, 1st premiums, $3 each, for Stone Mason Cabbages and Danvers Onions.

E. F. Webster, Haverhill, gratuity, $1.50, for eighteen varieties of Seed Beans.

The Vegetable department of our Fair, in point of quantity and quality, was a decided success. Your Committee makes the same complaint, however, that former committees have done, feeling justified in making it the more strongly, as the advice and suggestions of former committees, progressive in spirit, with the good of the Society only in view, have not been acted upon. What your Committee complain of is:—

1st. The scattering of the exhibit, part being on three tables in the hall and part in a tent outside. 2d. The different kinds of vegetables mixed together. 3d. Exhibits were not confined within the rules of the Society, as to the quantity and size of vegetables entered for premium.

We think three parties are to blame for it. 1st. *The Society*, by not giving notice that its exhibition hall will open for "entries" the afternoon and evening previous to the opening, thus

avoiding the rush, confusion and delay consequent upon the little time given in the forenoon of the opening day, for exhibitors to "enter" and arrange, to the best advantage, their exhibits, *where they ought to be.* The Hall Committee, under the Superintendent's direction, would have more time to look after and assist them, and the judges to make their awards, before the doors are thrown open to the impatient public. Exhibitors and committees would then have more time to devote to the transactions of the Society, outside of the exhibition hall. The Society should also provide designating cards for the position of the articles exhibited, and also provide all committees with appropriate designating badges, to be worn by each member during the continuance of the fair or while on duty. The importance of this to exhibitors and others seeking information is so great, that the expense of it would be insignificant.

2d. The *Superintendent of the Hall* should designate where each kind should be placed, by a card having the name of that kind conspicuously displayed; should not receive for entry or place *more* of each kind or variety than that for which premiums are offered, *or less*, except entered *for exhibition only*, so recorded upon the entry book, the exhibitor being so informed, and his exhibit not placed with competitors for premiums, but elsewhere, and when of special merit should receive gratuities. A suitable sub-committee should look out for and assist the exhibitors.

3d. *The Exhibitor*, before he exhibits, *should ascertain* the proper quantity and size required by the Society to compete for its premiums, *not* select five or six overgrown squashes, weighing twenty or more pounds, when three, not over ten pounds weight, are required; *not* select loose headed cabbages because they look larger, when a hard-headed, smaller one is superior; or great potatoes, scrubbed and rubbed, until they look as if made of wax, instead of grown in the earth, and as if "a good size for family use" meant large enough in size for a good family; or beets, carrots and turnips, scrubbed and shaved so close, both top and bottom, that they all become

"dead beats;" onions, with their outer skins peeled off "to make them look nice," their tops cut off so close as to make them unfit for keeping; vegetables dumped on to the table in a heap or almost hid in a deep, dirty box, instead of nicely arranging them, or in various ways making his exhibit non-conform with the rules or unattractive to the eye. The farmer ought to know by this time that the more attractive his products are arranged the better custom he has, and more from thoughtlessness than ignorance presents his products in the Fair in an unattractive form.

The above has not been written to apply so much to our late Fair as to all, for, as a whole, the exhibit was very attractive to the eye, and so generally good that many steps had to be taken by your committee between the hall and the tent, before a decision as to comparative merits could be made, and even then, with the best intentions to be just, it was almost impossible that full justice could be done when the articles in competition were not side by side.

The largest contributor to this department was the well-known seedsman, Hon. J. J. H. Gregory of Marblehead, who exhibited eighty varieties of seventeen different kinds of vegetables, and two hundred and ten varieties of seed. His collection of Tomatoes was the largest of any, and his mode of cultivating them has been fully treated in a report made by him to the Society in 1871, and copied into the State Report the same year. He has also in other reports treated vegetables and seed in his usual practical form.

The next largest exhibit was by M. F. Batchelder of Peabody, who contributed twenty-four varieties of twelve different kinds.

The potatoes exhibited by eighteen contributors were very fine, although averaging larger than "a good size for family use," many of the new varieties being among them. Mr. Emery exhibited the "Goodwin Seedling," which potato was awarded the Society's premium of $25 this year, "for the best seedling potato raised in Essex County, it having had a three

years' test." The "Burbank," another excellent potato, which should have a premium offered for it by the Society, looked well and good accounts are given of it. The potatoes shown by Alfred Green of Salisbury were enormous, and we are sorry that he did not reply to our inquiries, for, if what a bystander said was true, "that they were a fair sample of the whole crop," it must have been an extraordinary one, for twenty-three of Burbank, and twenty-two of early and late Rose filled a peck, also onions, twenty-nine to a peck. The exhibits of the "Ohio" potato by B. Frank Barnes of Boxford, and the "Beauty of Hebron" by Wallace Bates of Lynn, showed them to be very prolific.

We should judge that phosphates and other condensed fertilizers have proved the past season of great benefit to the potato crop, as well as others, from the accounts of it we have in the interesting replies to our inquiries which will be found in this report.

The display of Squashes was from twenty-four contributors, who had so many good ones as to make it no easy matter to decide which were the best. We noticed some whose large size for the variety would not commend them to an economical housekeeper or to a vegetable committee. We would advise any one planting for profit to select his seed from a medium sized squash that he has tried and found good, rather than from large ones which are generally coarse grained and watery. We also think the best time for planting to be between the 20th of June and 1st of July. Seed planted the 25th of June by our Chairman escaped the ravages of the bugs and produced about half a ton of even sized and well-ripened Turban and Hubbard Squashes, on 1500 square feet of land, manured only with two handfuls of Bradley's fertilizer to a hill, hills six feet apart (if they had been farther apart they would have done better) three plants were left in a hill.

Your committee were a little in doubt whether the premium offered by the Society "for the best American Turban Squash" meant any "Turban" found the best, or, the original type of

that variety. We were unanimous in our award to the "Essex Hybrid Squash" originated by Aaron Low of Essex, which he obtained from an accidental cross of the Hubbard and Turban. After four years' training and testing, it has proved by its uniform size, true turban shape, with the fine grain, sweet flavor and color of the "original Turban" added to the *hard shell*, dryness and long keeping qualities, of the "Hubbard," make it as your Chairman and others know by *actual test*, to be a very valuable addition to the list of varieties of this favorite vegetable.

J. P. Bailey, of Marblehead, exhibited a squash of the "Marblehead" variety, with an eighth section of it lengthways, in color and appearance of the "Hubbard" variety. In reply to inquiries, he states: "The seed was from a twenty-five pound Hubbard squash, and I can only account for the mixture in this way, viz.: that a honey bee has done the work while going from one plant or blossom to another. I could not say if there were other squashes on the same vine, from the fact of the vines being very much interwoven, but presume there were as I had a very large crop from a small piece of land. I shall plant these seed in a separate place, and use every means to prevent their getting mixed with others and will exhibit three or more squashes from the product at the next Fair."

We were surprised that more Field Corn was not exhibited, and that which was, so unripe; the only trace considered ripe enough and good enough for a premium was raised in East Saugus, and as no pop corn good enough to entitle it to a premium was exhibited, a gratuity was awarded to Messrs. Johnson for a small trace of the "Pearl" variety, said to be of excellent quality.

A peck of Oats, contributed by Mr. Appleton of the "Broadfields farm," Peabody, attracted attention, and his interesting experiments in regard to them will be found of value.

Sugar Beets, now attracting so much attention in New England for the manufacture of sugar, had some large speci-

mens shown, the best by William Miller of Swampscott, who, in reply to inquiries, gave very interesting and valuable ideas, not only in regard to them but also in the re-claiming of old swamp and sod land. If he and his employer are "not members of the County Society" they ought to be, for such men are of value in adding to the stock of information sought after by our society for its own and others' benefit.

The Cranberries exhibited were well ripened and of good size, Mr. Stiles of Middleton having far the best.

His experience in Cranberry culture, as given in this report, will be found of benefit, especially to those who, perhaps, are neglecting to utilize the most valuable part of their farm, by not turning an unprofitable swamp into a profitable cranberry plantation.

Mrs. Jeremiah Fuller, of Middleton, exhibited in six jars, some of the most perfect Gherkins, or Pickled Cucumbers, in form, size and condition, that has ever come under our observation. She states that the seed were planted the last of June; the cucumbers picked every other day. To prepare them for pickles, scald in salt and water twice, let them stand twenty-four hours each time; one cup of salt to one hundred pickles, and then scald twice in weak vinegar, after which put them in jars and fill up with strong, scalded vinegar, with a piece of alum the size of a pea, which hardens the pickles. They keep best in sealed jars.

Alphonso Mason, of North Beverly, one of our Committee and a well-known squash and melon raiser, adds the following advice: "In raising melons as well as other vegetables *I select the best and earliest for seed*, light sandy land with old barn manure as a compost, two shovelsful in a hill, six feet apart each way; cover the manure with dirt, dropping six seed in a hill, cover about three-fourths of an inch deep. The first time hoeing, leave four plants in a hill, the second time leave three. Cultivate often and keep clear of weeds. *Above all things avoid going into the vines while the dew is on, either to look at them or to work.* They begin to ripen about the first of August. The

way I select a ripe melon is by the high color and a crack around the stem. I do not pick them to ripen off the vines, as they do not have so good a flavor. I watch them very closely, as they want to be looked over twice a day, about 11 A. M. and 2 P. M., if the weather is very warm, if not, once a day will do. After a shower they ripen very fast, and will crack open if not attended to."

In regard to raising large Turban Squashes he says: "Spread six cords of stable manure to the acre and harrow it well with the wheel harrow. Hills from eight to ten feet apart, five seed in a hill. When hoed, thin out to three plants, keep them well limed to protect them from bugs, *never put it on until the dew is off*. In selecting my seed squashes I go all over the piece and put stakes down to some of the earliest and nicest looking ones, and leave them there until the squashes they mark are quite ripe."

We cannot help noticing in our report the lettuce of Martin Nies of Swampscott. It looked so fresh, green and crisp that one could hardly realize that Jack Frost had been around the week before.

Mr. Ives's display of seed, 198 varieties, attracted attention, and what he says about seed growing is information to the point.

There were several exhibits we should like to specially mention had we time and space. Information of value will be found in all the replies we have received. Read them!

Respectfully submitted for the Committee,

DAVID W. LOW, *Chairman.*

Reply of John S. Ives, of Salem, who received a premium for Collection of Seeds.

GARDEN SEED CULTURE.

One of the most important requirements to successful farming is by commencing the season with fresh seeds of reliable quality, raised from choice stock and grown with the utmost

care. It seems unaccountable that many gardeners pay so little attention to the manner of growing their vegetable seeds, as it requires so little trouble to select a few good roots of each variety in the Fall which can be set the following Spring in one row, as different species do not hybridize or mix, but different *varieties* of the same species should not be placed near each other. Manure well with well decomposed compost adding a little super-phosphate. When the Cabbages, Beets, Carrots and Parsnips commence to branch, cut off all side laterals, reserving only the centre shoots, or those starting from the centre. This produces large, superior seed, the failure of doing which is often the cause of unevenness in the seed and crop and sometimes even the failure of the entire crop. Never cut the tops with a knife from vegetables to be kept for seed stock, but remove them by hand; when setting a Cabbage for seed in the Spring a cross-cut one inch deep should be made on the extreme top of the head, which enables the tender shoot to burst from the centre of the solid head.

If our brother gardeners fail to grow the seeds they require, then purchase their supply from a *careful* dealer, who fully understands how seed should be grown. I will not say *honest* seedsmen, as I believe all seedsmen are honest *by compulsion*, for there is no business in which a man will so easily ruin his reputation and business as by selling poor seed, as one pound of worthless seed costing one dollar may ruin the salesman's trade throughout an entire county. For example, Mr. A. purchases of Mr. B. a pound of cabbage seed and sows it, waiting patiently the result. His cabbages fail to head, and in the Fall he has but few suitable for market. Now during the season, farmers call to examine and compare each other's crops. Mr. A.'s callers are informed of the worthless seed purchased of Mr. B.; the result is that Mr. B.'s seeds are condemned as not reliable. Therefore a seedsman in his right mind will never *intentionally* allow a pound of inferior seed to be sold to the injury of his character and business. Seedsmen are often asked to warrant, or guarantee their seeds to produce a crop. My answer

to such is yes, if you will guarantee the following conditions, viz.:—That the seed shall be planted at the proper time, that the weather shall be neither too hot or too cold, too wet or too dry that too much manure shall not be used, or too little, that no insect shall molest the crop and that every condition of nature shall be perfect. Crops often fail from many of these natural causes when the seedsman is censured and his seed condemned.

Reply of Francis H. Appleton, of Broadfields Farm, Peabody.

This season (1879) I harvested from 3 acres 31,424 ft. of land 169½ bushels of oats, and 8 tons, 215 pounds of straw and chaff; or at the rate of 45.55 bushels of oats and 2 tons, 89 pounds straw and chaff per acre.

In 1877 the same land had Hungarian grass, except half an acre where potatoes were planted on stable manure. The Hungarian was a thin crop grown on an old mossy pasture sod, with a fertilizer, and the potatoes were also a light crop.

In 1878 the part of the same field, where the Hungarian grew, was dressed with 18 cords stable manure, but no stable manure was put where the potatoes were; the whole was also fertilized in drill with "Stockbridge Hill & Drill Phosphate" and sown to Indian corn. The yield was 441 bushels of corn-on-cob, and 8 tons 776 pounds of stover.

Last Autumn I ploughed the fields, and early this Spring divided it into two parts for experimental purposes.

The north part, containing 1 acre, 35,827 ft., I dressed (without again plowing) with five bags "Stockbridge Oat Fertilizer," costing $22.50, and harrowed it well in; then sowed heavily, with 6 bushels of seed. I should say that besides wanting to seed heavily, I am much troubled by crows and had to allow for their depredations. The seed was bought of a grain dealer in Salem. This part has yielded 82 3-4 bushels of oats, and 4 tons, 154 pounds of straw and chaff.

The south part, containing 1 acre 39,157 ft. I dressed with 3½ bags Rectified Peruvian Guano, costing $24.50.

The treatment was the same over the whole field, and 6

bushels of seed were also sown here. This part has yielded 86 3-4 bushels of oats, and 3 tons, 1061 pounds of straw and chaff.

Since harvesting my crop of oats I plowed the field, dressed it with "Stockbridge seeding-down mixture," which was thoroughly harrowed in, and sowed to grass. Ever since Mr. Flint spoke to the Society at its meeting, in Salem, last Spring, I have taken opportunities to talk with other people, and have also read up about grass seeds, to see if I could not find some new mixture that would be adapted to my fields. I based my investigation upon the mixtures then advised by Mr. Flint. I found that the mixtures would be all he said on land that had sufficient moisture, but I do not think they would be good on land that is liable to be affected by drought. Consequently they would not do on my land.

The result was, I found that Herds Grass (Timothy), Red Top and Red Clover, with a few pounds of Alsike Clover per acre, were, in my judgment, just suited to my wants and lands.

I have, however, seeded down another piece, about one and a quarter acres, to grass with some Tall Oat Grass in the same mixture as above, as an experiment.

Since I came to the above conclusion, I was talking with a good farmer, who had been looking up the same subject, and been reading both English and American books on grasses, and it was his opinion that the selection I had made was best adapted to my land.

I will try to report on the result of my seeding with Tall Oat Grass, another season. I can now speak highly of Orchard grass, but would add that all land, sown with it, should be heavily seeded.

Knowing that your Committee are authorized to examine all seed that might be shown to you, I have reported to you as above.

Reply of William Miller Gardiner, Farmer to J. L. Little, Esq. at Swampscott, Mass.

I had about a quarter of an acre planted with sugar Beets, the production per acre would be about 40 tons, the average of each bushel 70 pounds. I have grown them for the last 5 years and had better crops each year previous to this.

I was sorry to hear my contributions to the fair were not according to the rules. An officer of your society told me it was 6 in number of each kind of vegetable. As for my being an Essex County farmer, I take the entire charge of the farm and garden for J. L. Little, Esq., of Swampscott, Mass.

Mr. Little has a farm of 100 acres, all told, in Swampscott, farmed on the modern style of farming in which we are very successful. Although neither of us is a member of your Society we were urged by Mr. Ware to exhibit, which we could have done more largely if we had thought of it sooner, and we were not posted at all in quantity required.

The land I raised the Sugar Beets on was a black muck with a clay bottom the second year from old sod land of 20 years laying sour, until drained. I planted the first week in May with stable manure and Guano, say 6 cords per acre with 1-4 ton per acre of Guano. The drills raised on account of low wet land. I have always succeeded best with raised drill system on low land. I have never failed in getting a good crop of Sugar Beets.

I have invariably succeeded best with all kinds of vegetables, except perishable seeds, to plant early, close to the sea shore as we are situated. My employer gives very liberal encouragement to farm well, for we let no weeds grow to take the nourishment away from the plants. Weeds, in my estimation, are the worst enemy a farmer has to contend with. Allow me to say in conclusion that we mowed 4½ tons to the acre on land that grew nothing but wild meadow grass before it was drained, then cropped with vegetables for two successive years, then laid down to grass before the ground froze in the end of November.

His concluding paragraph was so bristling with points for further information, that in response to a request, he made the following reply:

In reply to your inquiries—First, the underdraining was done with hemlock boards, one board 7 inches wide and another 8 inches wide nailed together ∧ shape with no bottom, as it was a hard clay bottom, with a few small rocks on each side so that the water would filter in. The drain did not average two feet deep on account of the little fall I had. I prefer boards to tile on account of frost. The cost of hemlock boards is $10 per 1000 feet. They have been proved to last underground 25 years. I have found them to work admirably so far. I drained about four acres this way; the land before drained grew nothing but wild swamp grass, and now about 4½ tons to the acre of splendid herds-grass and red clover.

We raise Sugar Beets solely for cows, which I consider very valuable compared with the coarse Mangolds. The amount of milk is much larger and of better quality, which I have proved.

I have never analyzed them for sugar but should think the per cent. was larger than I saw in the "Massachusetts Ploughman" of last week, as an average, for they are solid, close grained and very sweet, the *pure* article, which I am happy to say I have always had.

I have also been very successful in improving old sod-land of 25 years down, by plowing deep in October and laying down to grass again just before the ground freezes up, late in November, so that the seed will not germinate before Spring. I think it is equally as good as cropping it with culinary vegetables, sapping the ground again and encouraging weeds, which are no friends of mine.

It is a little more work to grade it down right. My system after ploughing is to manure with barn yard manure, 6 cords to the acre, wheel-harrowed in; then brush-harrow the seed so that the grass gets the best of the weeds before the warm weather of the next summer. I have raised four tons to the acre by following this way. I consider the old sod I turned

down, after rotting, is a pretty good manure of itself. I think top dressing old sod land with barn yard manure is almost like throwing money away, compared with working in the manure after ploughing. After the ground is down a year a top-dressing of sea manure works splendidly, especially on low land; the more wet on the surface the better for it.

I prefer horse and cow manure mixed, if the animals are grained well, which makes the good ingredients.

I may say the board drain is very simple to make; hemlock plank would be better than boards in some cases, especially if there is heavy teaming over it. Using plank they need not be so wide and the cost would not be but a little more. Only a few nails are required to keep the tops in place, a little opening being left all the better. I am sure such drains will give satisfaction in low land where you cannot go deep. The distance apart I put the drains is 50 feet.

Reply of M. F. Batchelder of Peabody, Mass., who received premiums for Beets, Carrots and Cabbages, and had other Vegetables, &c., very good.

In reply to your note of Oct. 13, I will give you what information I can in regard to the cultivation of Vegetables, &c.

Onions can be raised on most any soil where corn will grow; black or loamy soil the best, manured with horse manure six to ten cords to the acre. Crop 300 to 600 bushels to the acre. Sow early, about three pounds of seed to the acre.

Cabbages will grow on most any kind of land that is moist and rich. The earlier you plant, the better, and the richer the land the better they will grow. Plant in hills two feet by three. When they begin to harden up we begin to harvest them, from July until frost comes.

Potatoes. The earlier they are planted the better; manure very high. Plant in drills three feet by one. When the the tops dry down begin to harvest. 150 to 200 bushels per acre.

Corn. Same kind of soil and same manure. 50 to 75 bushels per acre. Seed from good ripe corn.

Carrots. Same kind of soil, same manure. 20 to 25 tons per acre. Seed, Horn Carrot.

Beets. Same soil, with plenty of manure. Sow in drills. Seed, Turnip Beet.

Squash. Same soil, with compost manure and plenty of it. Sow in hills ten feet apart, leave two seeds in a hill. Plant about June 1.

Melons. Light, loamy or sandy soil, with good, rotten manure, three or four shovelfuls in each hill, six feet apart; leave two seeds in a hill; plant the middle of May.

Seed. I raise most of the seed I use. As soon as the seed breaks ground, begin to hoe and pull weeds, continuing from time to time, until the weeds are all killed out.

Bugs. Squash bugs are kept off with air-slacked lime put on the plants every morning when the dew is on the leaf. Potato bugs are destroyed by using Paris Green. Put one tablespoonful into a pail of water and stir it well, then with a sprinkling pot go over the vines two or three times a day until they are killed out.

Harvesting. Onions—when the tops begin to dry and fall, we begin to pull them and let them remain on the ground until dry; then get them into the barn and pull off the tops, keeping them in a dry place where they can have the air.

Grass land to yield well wants to be well-manured, and for all crops, the more manure the better and larger the crops.

Reply of Seth W. Hathaway of Marblehead, Mass.

My soil is of strong, dark loam, with clay bottom. I use stable manure mixed with sea manure. I think highly of Russell Coe's Phosphate, also, Peruvian Guano. I raise my own seeds. I plant as soon as the ground is suitable to receive the seeds, and continue to plant until the first of July, using plenty of seed each time, to be sure of a full supply of plants, and if I have any surplus there is generally a demand for them. I protect them from bugs and worms by using slacked lime and ashes. The cabbages that I keep for seed I have covered up

out doors, and the rest of the vegetables I keep in a cool cellar. I took the second prize on Stone Mason and the first prize on Brunswick cabbages at the late County Fair. I did not think of taking any vegetables to the Fair until the Saturday previous, and my largest cabbages I had sold.

I planted six rows of large "Alpha" potatoes, cut and planted expressly for stock seed, manured with a compost of horse, cow and sea manure. Having some small ones left, a few days after I planted them, using Coe's Phosphate, strewing in a handful to every three feet. While growing there was a marked difference in the color of the leaves, those planted with manure were of a light green, those planted with phosphate were of a very dark green color; they were planted side by side, (the ground the year before was planted to cabbages,) and when dug there was a full third larger crop with the phosphate, the potatoes being larger, smoother and handsomer than those planted with the manure. I think that it will stand the drought better than the stable manure.

Reply of Allen Lee of Manchester, Mass., who received gratuities for Potatoes and Seed Beans.

My Early Rose Potatoes were raised in clay and loamy land; one-half were planted with Stockbridge's fertilizer and the other with stable manure. I used half a gill of the Stockbridge to a hill, well cut in. The Stockbridge produced 110 bushels, whilst the stable manure produced 75 bushels. Those planted with Stockbridge were ten days earlier, or in ten weeks from planting I dug them, all ripe. I have had the seed twelve years; they are just as good now as the first year, and I expect to keep them good as long as I live. I plant whole potatoes if my seed is common size, May 20th. If I can, I then get clear of the first crop of bugs, and before the next crop comes my potatoes are well up. I give them a good hoeing when about eight inches high and that is all. The two best crops in our neighborhood this year, had but one hoeing each. I go around among my potatoes and pick off the bugs once a week. The

angle worm is the greatest trouble to me, eating my potatoes after a shower.

Of Beans I have tried all kinds and find but two kinds fit to raise. They are the Agricultural or the Mountain Cranberry, Pole and Bush Yellow. It is very early, ripening all at the same time. I planted this year a piece of land, 120x51 feet, and from it I got 36 bushels of pods. I always plant June 10 to 15, always manuring with hen manure, mixed with meadow muck, one-half of each.

Reply from A. C. Estes of Rockport, who received a premium for Potatoes and Cabbages.

I cannot give you anything of much value regarding the culture of vegetables, for I have not kept any account of the cost on any piece of land. I will state that this year, on about one-half acre for potatoes, I spread on a coat of rockweed and turned under in the spring, and in planting used about a tablespoonful of Bradley's superphosphate in the hill, with very good results, having about 125 bushels, on the half acre, of Early Rose Potatoes.

I also planted my Cabbages the same way, with good results. I have never used any phosphate on any other crops. For Onions I turn under a coat of rockweed and another of barnyard manure, in the Fall. I think it is better plowed in the Fall than in the Spring.

Reply of E. G. Hyde of Danvers, who is over 76 years of age.

1st. My land is a loamy soil, an old pasture all run out with blueberry and other wild bushes. I put my plow to work and tore it up a few years ago and made a garden of a portion of it, where I can raise all kinds of vegetables by feeding with good manure or No. 1 Guano, I mean Peruvian, which I think much of, for potatoes with some manure. 2d. You inquire how I manure for different vegetables. On that point I act according to my judgment or state of the land. If the land is poor it

requires more manure. Say my onion land, I put on four to six cords to the acre. Potatoes, I plant in drills two and a half feet apart. 3d. You inquire about seed. I generally raise my own seed. Sometimes I fail in the project. I often buy potatoes to renew my seed or change it, which I think is a better way. I think it is wisdom to keep the weeds down and hoe often. A horse cultivator and man will do two-thirds of the work amongst corn and potatoes. 4th. You speak of insects. No end hardly to them. They are a great trouble to farmers. I have to give the bugs Paris Green, which gives them a bad appetite and very sure to kill, but it requires much care. Maggots are a pest among our onions. I have never found anything to stop them, but only to squeeze them to death. They have been very destructive this year, but after all the poor insects claim a living, if they do have to steal from us. The little striped bug is a great plague, too, but not so bad as the large black bug, which soon destroys the vine. All the way for farmers to do, who want to raise squashes, is to plant about the 20th of June. 5th. I harvest my crops when they are fit for the market. My potatoes and peas come first. 6th. I keep crops best. Sometimes I think it best to head up in barrels, onions and apples and put them in a cool cellar. Some differ on this point and put them in pens, some keep them in the barn. 7th. Results per acre *average*. Sometimes I raise 300 or more bushels of onions; 200 bushels is a very good crop. Corn, I do not plant much, neither do I plant much Cabbage or Carrots.

I have answered about all your questions as far forth as I am able, (living to see about 76½ years, which I esteem a great blessing from my Heavenly Father).

P. S. Those turnips that took the first premium were sowed broadcast where I had early potatoes. Sometimes I sow them in drills.

Reply of Aaron Low of Essex, who received premiums for new varieties of Squashes and Tomatoes.

To the Chairman of the Committee on Vegetables :—

The soil on which most of our vegetables are raised, particularly those varieties for early use and marketing, is a warm loam which appears best adapted for Early Peas, Beets, Cabbages, Potatoes and Sweet Corn. We depend mostly on stable manure, but use considerable Fish Guano, Stockbridge Manure and Darling's Bone. We manure liberally, as we follow all of our early crops with a second planting, either of Squashes, Cucumbers or Cabbages. The past season I planted among our early peas and potatoes my New Hybrid Squash, planting the seed between the rows after the last hoeing, from the 25th of June to July 4th, putting a shovelful of stable manure to each hill, and hills about eight feet apart each way. Cultivated and hoed them twice, and as a guard against bugs, sprinkled the plants as soon as up with flour of plaster. In planting so late in the season we escape the worm that destroys the roots of the vines. The squashes, coming up very quickly and growing rapidly, soon cover the ground and keep down many weeds that would otherwise be troublesome. This new variety appears well adapted far late planting, as it matures very quickly, (producing the past season, in two months from the planting of the seed, squashes weighing twelve pounds and well ripened,) is very productive, of good quality, and an excellent keeper, specimens of last year keeping till June 10th. We keep our squashes in as cool, dry place as we can without injury from frost. The results of the two crops to the acre would be, I think, if the three varieties of potatoes planted are Clark's No. 1, Beauty of Hebron and Early Rose, 200 bushels and from 8 to 10 tons of squashes.

I think that it is quite an advantage to follow an early crop with a second, as it can be produced with much less labor, and in my experience fully as large a product as if only the first crop was obtained. Of course, the land must have an extra amount of manure applied to perfect both crops, but the extra

cultivation given leaves it free from weeds and in better condition for the next year.

Reply of E. P. Richardson of Lawrence, who received a premium for "Ohio" Potatoes.

From some experiments with phosphates in growing potatoes this season, I am satisfied that under some conditions, at least, they are profitable, largely increasing the yield and producing remarkably smooth, handsome potatoes, the excellent quality being noticed by all who had them. On different land and under different conditions, they might not do as well, and from one or two instances which have come to my notice, I have doubts as to their profitable use again on the same land.

In one instance on pasture land, soil, yellow loam, that had borne a crop of corn which was manured moderately with stable manure, medium sized, Early Rose, cut once, lengthwise, were planted with Bowker's Hill and Drill and with Bradley's Phosphate. Several rows of such were carefully measured, the potatoes weighed and the average taken, also a row which was planted without fertilizer or manure of any kind. The yield in bushels was at the following rate per acre.

	Large.	Small.	Total.
No Manure,	131	56	187
Phosphates,	213	74	287

A gain of 100 bushels per acre, and of marketable potatoes, 32 bushels. None but good sized were classed as large, all less than medium as small, more going with the small than is customary, I think.

I find that the Ohio and Burbank yield better than the Early Rose, and rot much less, the latter being scarcely affected. On a piece of new land, where these varieties were planted, the result was as follows, somewhat less care being taken in measuring, the potatoes not being weighed. Very few were small:—

	Ohio.	Burbank.	Early Rose.
No manure,	139		
Guano,	186	250	
Phosphate (Bradley's),	302	318	236

Reply of Alfred Green of Salisbury, who exhibited handsome, though very large potatoes and onions.

Your favor of Oct. 18, asking statement of my manner of cultivating is at hand.

Late Rose. On thirty-one rods of sod pasture land, ploughed in about five cords of manure, made by two cows, two hogs and one horse; furrowed with horse in rows three feet apart; seed, potatoes size of a hen's egg, cut once and dropped two feet apart. 100 pounds Darling's fertilizer and 100 pounds Plaster mixed together, strewn in the furrows. Crop hoed twice, one application of Paris Green on the second crop of bugs. Dug by hand hoe. From the 31 rods, I dug, of large potatoes, 40 bushels, and of small, 10 bushels.

Early Rose. Land dressed, seeded and cultivated the same as for the Late Rose, on heavy loam, on which a crop of cabbages was raised last year. On 22 rods grew, of very handsome potatoes, 45 bushels; of small ones, 5 bushels.

Burbank's Seedling. Land, dressed, seeded and cultivated the same as for the Early Rose Potatoes. On 5 rods, grew 12 bushels of large and 1 bushel of small, from one peck of seed potatoes.

Reply of E. F. Webster of Haverhill, who received a gratuity for eighteen varieties of Seed Beans.

In regard to the raising of Beans I find they do much better to plow the manure in, in the early Spring, and plant from the 20th of May to the 20th of June. Our soil is all the way from gravelly to dark loam. Sub-soil is usually loamy with exception of clay.

Our Lima Beans we plant from the 10th to the 15th of June in the richest and best soil we have. They do best to plant after the land gets well warmed with the sun, and the soil well mellowed, then put in the seed with a little super phosphate or bone meal guano in the hill. After the beans commence to run pinch off the runners, head them in and you will get more beans from the same quantity of seed. As to my

seed, I raised all I planted the past year, except one kind, that was the " Rhode Island Butter," which is a very good market bean and worthy of cultivation.

We prepare our land the same as for corn, as beans need good soil, and very much the same cultivation. In growing, cultivate with horse-hoe. Have not been troubled with bugs or insects, as we keep a flock of chickens in our garden and the field ; are troubled some with blight ; do not know any particular remedy for it, but to plant again the same ground, if not too late in the season. Have planted the " Agricultural" as late as the 21st of June, with good success. We harvest for market, first, green for stringing, next, for shelling green ; we then pull and stack for late. Our early beans pull, place in piles, and take them to the barn and thrash them with a common flail. We do not shell any by hand, as it is too much labor.

The most profitable kinds for market of the bush wax varieties are " Ferry's Golden Wax" and the " White Wax," but that is a poor bearer, not so good as the " Golden Wax ;" of other sorts than Ferry's, the " Six Weeks," " White Valentine" and " Bush Horticultural" are also good market varieties. Of *Pole Beans*, the " London Horticultural" and "White Horticultural," for string in the pod. For our own table the " Round White Wax."

The " Marblehead Champion" is very early for a pole bean, but not profitable for market. It was first sent out by Mr. Gregory, but I find it is not worthy of cultivation as far as I have tried it.

For *dry use* we like the " Dutch Case Knife ;" for baking, " London Horticultural," both bush and pole. The " Pea Bean White" is good, but no better than the " Yellow Eye Bush ;" have not tested the R. I. Butter fully yet. As to its merits can speak more fully after another year's trial.

The other vegetables I raise are Turnips, Peas and Mangolds. The common Turnip Beet does best with manure plowed in, in the Fall, and spread and harrow in fine manure in the Spring.

In my business I raise more fruit than vegetables. I think, however, that, from what vegetables we do raise, we get better results from our labor by plowing coarse manure in, in the Fall.

Hoping what little I have written may be of some benefit to you and others, I remain, etc.

Reply of H. A. Stiles of Middleton, who received the Society's premium in 1873, *for his experiment in the cultivation of the cranberry, and received the premium this year for best cranberries.*

Your postal came duly at hand. It would afford me greater pleasure in replying could I make some statements concerning cranberries, resulting from long experience, close observation and continued experiment.

The following year after I received the Society's premium, half an acre of the land which grew the premium crop was burnt over by sparks from the Railroad and, consequently, but few cranberries have grown there until the present year. This piece of land was ploughed, harrowed, and rolled down smoothly, and after setting the vines about ten inches apart, no labor worthy of note, has since been expended by way of improvement. As the nature of this soil is quite sandy, a very important requisite, and considering the comparative cheapness of preparing the land *by ploughing*, I regard it, on the whole, as my best experiment in growing the cranberry. That portion of land (about an acre) lying west of the railroad, which contains more muck and less sand, I did not plow, but spread upon the grass about three inches of coarse sand, has generally produced good crops of cranberries yearly. Last year the prospect for an abundant crop on all my lots was never so good until the 6th of June, when that remarkable frost destroyed them. Last September I spread two inches of sand over this piece of land from the cart, and although the *quantity* of berries was not increased this year, they ripened earlier and were less injured by the frosts of September, and will, the next few

years, amply repay the expense. In setting vines upon land unfit to be plowed, which produces grass naturally, I would spread upon the surface, in August, from one to two tons of cheap hay per acre, covering the same with two or three inches of sand for the good of the cranberry and to keep the hay in place. In the month of May following would set the vines as thickly as could be afforded, striking the hoe through sand and hay into the soil. The hay acts as a fertilizer to the vine and *very effectually* prevents the growth of grass.

It is evident, I think, that more cranberries are destroyed by the frosts of June and September than all other causes combined, in this locality, hence the importance of a flood gate to protect the vines and cranberries by water, where it is possible to be done. From my own experience and observation, I have yet to be fully convinced that continuous flowing in the freezing months is necessary to insure a crop of cranberries. This may seem to be an extraordinary statement, but my reasons are these: 1st. It is *unnatural* to the vine, and when covered with water early in Autumn it becomes *very tender* (not hardy) by spring. I have known a crop of cranberries, or the buds of the same, under a mill-pond to be spoiled by the scorching rays of the sun when the water was let off rather suddenly. I think the bud is oftener injured by frosts after the water is drawn away. If it escapes the heat and cold of April and May, it is more likely to be injured by the frosts of June than those vines that withstood the frosts of Autumn and Winter without much water.

In response to a request for him to make a statement, at length, in regard to cranberry culture, if he so desired, the Chairman of the Committee received the following:

The cultivation of the cranberry probably commenced in the earlier part of the present century, and conducted on a limited scale until within thirty-five or forty years, when it received considerable attention in the vicinity of Cape Cod in this state, and the consequences have been increased productiveness and improvement of the plant. In most of the New England

States and some of the Middle and Southern, the cultivation of the cranberry has received some attention, but to New Jersey more than any other state is entitled the credit of bestowing much energy, money, care and patience, in the culture of this delicious fruit until it has assumed much importance.

The most important requisite to the successful culture of the cranberry is the *right kind of soil.* The conclusions arrived at by the observation and experience of cranberry growers generally, are, that a *moist, peaty* or *muck soil*, intermixed with *beach sand*, and free from loam or clay, is the most suitable. The method of preparing the soil for the growth of the cranberry vine must vary with the kind of soil. If it be sufficiently dry in summer, the cheapest and most direct method to fit it for receiving the vine would be by plowing. It may then be harrowed and rolled down, when it is ready for the vine, which may be set in holes made with the hoe, eight or ten inches apart, covering the roots from one to two inches in depth. If the plot is to be flowed with water during the winter, the vine may be planted as soon as the land is made ready, but if not flooded the vine should be set in *spring time.*

The second mode of fixing land for the cranberry, which could not well be ploughed, would be to spread evenly as possible, either beach or coarse sand, to the depth of from three to five inches, as the case might seem to require to keep down the grass until the vine spreads and checks its growing. In planting the vine proceed as in the plowed lot.

The third method of preparing a plot of peat or muck for the vine is to spread evenly a quantity of *litter hay* (perhaps two tons to the acre), upon the surface, covering the same with sand from three to five inches in depth. If this is done in July or August, the vines may be planted in April or May following. The hay will very effectually kill the grass and many other substances not favorable to the growth of the cranberry, and quicken the growth of the vine in its decaying condition.

There are one or two other methods which may be employed in preparing land for the cranberry. If the patch can be flow-

ed with water during the warmer season, of sufficient depth, it will kill out all vegetation, thus preparing the soil very cheaply for the vine.

Again, if there are substances that cannot be eradicated by water or by spreading sand, the surface soil may be removed, putting on sand in its place, but the operation is somewhat expensive, and the surface soil being more congenial to the growth of the cranberry it should be, if possible, retained.

As there are many varieties of the cranberry growing in this region, it is important that those vines be selected that are fruitful, producing *large berries*, *early* to ripen and of good color. The importance of a flood-gate to prevent by water the destruction by the worm and the frosts of June and September upon the cranberry, can hardly be overrated in this locality. The advantage of flowing during the freezing months, when the weather is *uncommonly cold and severe* are good, ofttimes, in saving the *fruit bud* of the cranberry, but the effect of water for several months upon the vine produces an unnatural *tenderness* of the plant which will not withstand the effects of heat and cold when suddenly drained off in spring time, and the *bud* is oftener *destroyed* than protected.

Cranberries that have grown upon a sandy soil, and have received the sun and air, are generally ripened and fit to be gathered from the 10th to the 20th of September. They should be picked by the hand and spread upon floors in buildings, where the air freely circulates, six or eight inches in depth, to remain until endangered by freezing, and then after winnowing and separating the dry and unsound fruit, they may be put in barrels and placed in a dry and cool cellar, it being the best method for keeping the fruit. Respectfully submitted,

H. A. Stiles.

COUNTERPANES, CARPETINGS AND RUGS.

The following Premiums and Gratuities have been awarded :

L. L. Ramsdell, Lynn, 1st premium, one Quilt, $4.00.

Mrs. J. B. Johnson, 2d premium, one Quilt, $2.00.

Mrs. Nancy W. Fish, Danvers, one Worsted Log Cabin Quilt, gratuity, $1.00.

Mrs. S. K. Blanchard, East Saugus, one Quilt, gratuity, $1.

Alice A. Aborn, one Quilt, gratuity, $1.00.

Mrs. J. Selliman, Lynn, one Crib Quilt, gratuity, $1.00.

Mrs. Wm. Heard, 91 years old, Ipswich, one Quilt, 3000 pieces, gratuity, $1 00.

Mrs. Donavan, Salem, one Woolen Quilt, gratuity, $1.00.

Mrs. C. P. Buckley, Danvers, one Knit Quilt, gratuity, $1.

Mrs. M. D. Porter, Swampscott, one Worsted Mat, 1st premium, $3.00.

Mrs. Griffin, one Mat, 2d premium, $2.00.

Miss A. C. Goodale, Danvers Centre, Carpet Rug, gratuity, $1.00.

Mrs. J. L. Robinson, Lynn, Burlap Mat, gratuity, $1.00.

Mrs. G. F. Clifford, one Button Mat, gratuity, $1.00.

Mrs. R. M. Jacobs, Peabody, age 80, gratuity for Rugs, $1.

Mrs. Mary Migill, Lynn, one Button Mat, gratuity, $1.00.

Respectfully submitted.

Signed—Wm. D. Chamberlain, Sarah B. Shorey, Clara W. Lewis, Rufus Kimball.

ARTICLES MANUFACTURED FROM LEATHER.

The Committee report :—

There were only two exhibits of manufactures of leather—one of a Brass-Mounted Express Harness by E. A. Putnam of Beverly ; the other, of Shoe Stock, &c., by T. W. Tyler & Co., of Lynn. We append a list of the various articles manufactured by Messrs. Tyler & Co.

Grain Leather Department.—Men's, Women's, Misses' and

Children's Outer and Inner Soles, Outside and Inside Taps, Heels and Rands, Stiffenings, Plain, Scarfed or Rolled, Oak Tanned Welting Cut and Fitted for the Goodhue Machine or Hand work.

The Patent Fargo Tip, Scarfed and Marked for Stitching by the Patent Counter Skiver, for which they have the agency.

Pasted Stock.—Men's, Women's, Misses' and Children's Double Cover Stock and Pancake Inner Soles, Taps, Heels, Stiffenings, Pancake Heeling, Kip and Split Heel Stock, grease extracted.

And we would recommend the award of $5.00 to Mr. Putnam and $10.00 to Messrs. Tyler & Co.

Amos Prince, Danvers, *Chairman;* Wm. A. Brown, Lynn; J. Henry Hill, Amesbury—*Committee.*

MANUFACTURES AND GENERAL MERCHANDISE.

The Committee on Manufactures and General Merchandise find nothing exhibited for which a premium was offered, and have awarded gratuities as follows:—

C. A. Lawrence, Beverly, Antique Pottery, gratuity, $1.00.

Smith & Quereaux, Lynn, Shoe Trimmings and Shoe Bows, gratuity, $2.00.

D. S. Neal, Lynn, Apple Corer and Quarterer, gratuity, $1.

Martin Nies, Swampscott, Willow and Rattan Goods, gratuity, $1.00.

Gideon Marshman, Lynn, Blind Fastener, gratuity, $1.00.

J. M. Barnett, Lynn, Lasts, gratuity, $1.00.

Gloucester Isinglass Glue Co., Gloucester, case Isinglass, gratuity, $1.00.

W. W. Crocker, Lynn, case of Colors for Shoes (samples) gratuity, $1.00.

H. C. Hubon, Salem, imitation Stained Glass, gratuity, $1.

Smith & Dove Man'g Co., Andover, Machine Thread, gratuity, $2.00.

John H. Brown, Lynn, Box Sled, gratuity, $1.00.

Whitten & Lascell, Lynn, Needles and Awls, gratuity, $2.

A. Colburn, Lynn, Signal Lantern, gratuity, $1.00.

J. F. Vella, Lynn, Fancy Boots and Shoe Heels, gratuity, $1.00.

George E. Marsh & Co., Lynn, Staple and Toilet Soaps, gratuity, $2.00.

Wm. R. Porter, Salem, Hot Water Bed-Heater, gratuity, $1.

Nathan M. Hawkes, Charles Ingalls, Rufus Kimball, Geo. C. Cressy—*Committee.*

FANCY WORK AND ART.

Your Committee have examined the articles enumerated in the list of Fancy Work and Art exhibited, and make the following awards:—

Mrs. D. B. Moulton, Lynn, Table Cover and Brackets and Fancy Table, 1st premium, $3.00.

Mr. Vickary, Lynn, 3 Cases Stuffed Birds, 2d premium, $2.

Wm. A. Burrill, Lynn, 1 case Wax Work, gratuity, $1.50.

S. P. Guild, Lynn, 3 Oil Paintings, gratuity, $1.00.

Mrs. A. O. Carter, Lynn, Hair Wreath and Mexican Lace Work, gratuity, $1.00.

Miss M. Y. Newhall, Lynn, 1 Panel Picture, gratuity, $1.00.

Mrs. A. P. Newhall, Lynn, Pen Marking, gratuity, $1.00.

Wm. D. Chamberlain, Lynn, Polished Horns, gratuity, $1.

Miss L. S. Watts, Lynn, Wax Autumn Leaves and case of Tropical Leaves, gratuity, $1.00.

C. Crowley, 1 case Penmanship, gratuity, $1.00.

Miss Lillie Martin, Lynn, 8 Pieces of China, gratuity, $1.00.

Mrs. Jacob Batchelder, Lynn, 3 Worked Flannel Skirts, gratuity, $1.00.

A. Bushby, Lynn, Photographs, gratuity, $1.00.

Charles J. Butler, Lynn, Fancy Worked Horns, gratuity, $1.

Lucy S. Nutting, Lynn, Water Color Paintings, gratuity, $1.

Carrie M. Allen, Lynn, 2 Panel Pictures, gratuity, $1.00.

Miss Hattie Woodbury, Lynn, Oil Painting and Panel Pictures, gratuity, $1.00.

Miss Mary M. Babb, Lynn, 1 Carriage Robe, gratuity, $1.00

J. W. Tapley, Lynn, Foot Rest, gratuity, 50 cents.

Mrs. W. L. Bowdoin, Salem, 1 Tidy, gratuity, 50 cents.

Mrs. Rufus Kimball, Lynn, Child's Skirt, gratuity, 50 cents.

Miss Mons, Lynn, Fancy Work, gratuity, 50 cents.

Jennie M. Oliver, Lynn, Water Color and Panel Picture, gratuity, 50 cents.

W. Miller, Swampscott, Rustic Table, gratuity, 50 cents.

Lyman M. Dow, Lynn, Lady's Work Box, gratuity, 50 cents.

C. W. Gould, Lynn, 1 case Bird's Eggs, gratuity, 50 cents.

Miss M. F. Coffin, Lynn, 1 Picture, gratuity, $1.50.

Mrs. N. J. Warren, Marblehead, Sofa Pillow, gratuity, 50 cents.

Sarah M. Ridgeway, West Newbury, Wooden Plates with designs, gratuity, 50 cents.

Mrs. J. A. Lord, Jr., Salem, Table Cover, gratuity, 50 cents.

Mrs. E. C. Johnson, Lynn, 1 Knit Mat, gratuity, $1.00.

LYNN ART ACADEMY.

One piece Water Color, by Frank Pettingill, gratuity, $1.50.

Porcelain, Julia W. Gordon, gratuity, $1.00.

Pastel Painting, S. M. Cotton, $1.50.

Diaphanic Trans, by Annie J. Hicks, gratuity, $1.00.

Crayon Drawing by H. E. Remick, gratuity, $1.00.

Wax Fruit, by Josie Newhall, gratuity, $1.50.

Fret Sawing, George H. Bacheller, gratuity, $1.00.

Tile Painting, by Jenny Stacey, gratuity, $1.00.

Wax Flowers, S. P. Boynton, gratuity, $1.50.

Panels, C. L. Joint, gratuity, $1.50.

Marine Views, Anna Newhall, gratuity, $1.50.

Landscapes, Walter M. Lamkin, gratuity, $1.50.

Flower Pieces, Mary Call, gratuity, $1.50.

Butterflies, Alice Faulkner, gratuity, 50 cents.

Mrs. C. E. Hatch, Spring Pillow, gratuity, 50 cents.

Miss Bush, Salem, Table Cover, gratuity, 75 cents.

Kate Moulton, Picture, gratuity, 75 cents.

Miss Sanborn, Paper Dolls, gratuity, 50 cents.

The Committee would take this opportunity to say that the amount to be distributed was so limited they were obliged to pass over a great many articles that deserved more than a passing notice. There seemed to be no way to acknowledge the efforts of contributors, except to give general praise to all who have sent specimens of their work to the Exhibition.

Respectfully submitted,

Warren Ordway (by W. D. Chamberlain), M. E. Fuller, Clara W. Rose, D. B. Burnham—*Committee.*

WORK BY CHILDREN UNDER 12 YEARS OF AGE.

Award of premiums for work by children under 12 years of age :—

To H. D. Floyd, Lynn, for Wall Pocket, gratuity, $1.50.

To Miss Grace M. Cone, Peabody, 7 years old, 1 quilt, gratuity, $1.50.

Millie A. Goodwin, Lynn, Paper Doll, gratuity, $1.50.

A. B. Fuller, Middleton, 11 years old, 1 Door Mat, gratuity, $1.50.

A. Gracie Perry, Danvers, age 6, 1 Frame, gratuity, $1.00.

A. W. Perry, Danvers, age 12, Parlor Rag Bag, gratuity, $1.00 ; Hanging Basket, gratuity, $1.00.

Willie N. Wales, Groveland, age 11, Book of Drawings, 1st premium, $3.00.

Winnie J. Plumstead, Swampscott, 9 years old, Lamp Mat, 2d premium, $2.00.

E. D. Floyd, Painting, gratuity, $1.00.

Sarah B. Shorey, Mrs. E. W. Jacobs, Mrs. N. E. Ladd. Mrs. S. C. Rose—*Committee.*

IMPROVED PASTURE AND WASTE LAND.

Your Committee being called upon to examine only one piece of land, which was entered by Mr. Joseph Horton, of Ipswich, four members, Messrs. Aaron Low, David Warren, Eldred S. Parker and myself, met there on Thursday morning, July 24, and attended to that duty. These same members also met at Lynn, during the Fair, September 30th, and would report that they do not consider the piece of land entitled to receive a premium, and the following is submitted :—

In order to describe the situation of this land, I would state that it is in the same field with and adjoining land that has previously received premiums from this Society for improved land.

It is a "soft, deep, black mud," and had been covered with water so deep, that at times, we were told, boys had bathed in it. A division fence formerly ran through it in a crooked course, which brought a part of this swamp land into a neighbor's pasture.

Such an inaccessible position made it difficult to make repairs on the fence, and the whole piece not being under one man's control was an obstacle in the way of draining it thoroughly and economically. Mr. Horton first made an arrangement to straighten the division line and fence, which enabled him to drain the whole piece and do his plowing to best advantage.

The source of the water that covered this land, independently of the rainfall that settled on it, was some distance from it, being an extremely clear spring which was on solid ground and which had been dug into a basin for drinking purposes for animals, and as a pond for water fowl. From this source quite a deep ditch had been dug to drain land between it and that under consideration. This intervening land appeared to have a more porous sub-soil, with a surface slope that kept it more readily free from water. The ditch had extended only to the land your committee examined, until recently, when it was ex-

tended in an almost straight line, but slightly to one side of the centre of the piece, and continued into a swamp beyond. When this prolongation of the ditch was originally dug, it undoubtedly did all the work of conveying the water away from the land, and had the original shape and size of the ditch been permanently preserved, its usefulness would undoubtedly have continued for many years, requiring only an occasional scraping out of its bottom; but simply being an open ditch, running through soft, deep, black mud, without either stone or wooden sides, the inevitable result has been that the ditch is beginning to fill up, and if not soon again entirely dug out the whole piece of land that was entered with us this year and reclaimed by an expenditure of much time and hard labor must by degrees, and comparatively quickly, revert nearly to its original swampy condition, and we noticed that a growth of poor grass had already begun to show itself there. Any one who has a muck meadow, from which he has dug mud for fertilizing purposes, knows that, in a few years, those deep trenches become considerably filled up by the subsoil of the adjacent land, and the consequent settling of the neighboring surface.

Had Mr. Horton put board or stone sides to his ditch when he first dug it, (or better a line of good tile) his original work would have all remained for many years to remind him of the thoroughness of what he had done.

Your committee would praise the attempt made by Mr. Horton to advance the condition and increase the productiveness of his land, and have to thank him for polite attention to them at the time of their visit, but, understanding that it is the intention of the Society, in offering such premiums as we had placed in our charge, to award them to competitors whose entries are so complete that they can be held up as examples that the society can recommend for others to copy and follow in detail, they find that they are unable to recommend an award in this case. It appears that Mr. Horton has received already in 1875, 1876 and 1877, first premiums each year for similar entries and experiments, and your committee, after making their

decision on other grounds, which I have stated, doubted whether they could award the same premium to the same person a second time for the same experiment and be complying with the Society's rules.

Your Committee were unanimous in coming to their decision, and the duty of explaining their reasons was left to the Chairman, who has endeavored to comply with their intention.

Respectfully submitted,

FRANCIS H. APPLETON, *Chairman.*

GRAIN CROPS.

The Committee on Grain Crops report two entries for premium; one for Barley, by W. W. Perkins of Newbury, and one for Indian Corn by A. P. Noyes of Middleton. Both crops were visited by two of the Committee, and the statement of Mr. Perkins, giving the required facts of cultivation is presented.

We recommend the premium on Barley, $10, be paid to Mr. Perkins.

Nathaniel Peters, Charles R. Anderson—*Committee.*

Statement of W. W. Perkins.

To the Committee on Grain Crops:—

GENTLEMEN: The crop of Barley that I enter for premium was raised on 180 rods of land and measured by Edwin P. Noyes. The land was ploughed in the Fall of 1877, eight inches deep. It had been in grass for many years previous, until it produced little but white weed; the land is clay loam quite low; last year it was planted with cabbages, corn and squashes, manured with stable and barn-yard manure, about 9 cords to the lot. The crop of corn was very good, should say about 60 bushels to the acre; squashes at the rate of 10 tons to the acre; the cabbages were an entire failure. The present year the ground was manured with 5 cords

of barn-yard and stable manure, ploughed 7 inches deep, harrowed three times with wheel harrow, and four bushels of barley sowed the 14th of May. Covered the seed with brush harrow and rolled with an ox-roller. Harvested, August 2; measured by William Chase; 47½ bushels and weighing 48 pounds to the bushel.

EXPENSES.

5 cords of manure, $6.00 per cord, one-half estimated value,	$15 00
Plowing, harrowing and sowing,	4 00
Harvesting,	3 00
Threshing,	5 00
	$27 00
47 1-2 bushels, 75 cents per bushel,	$35 25
Straw, estimated 1½ tons,	15 00
	$50 25

Newbury, Oct. 30, 1879. WM. W. PERKINS.

I hereby certify that I measured the above mentioned barley ground, and it contained 180 rods. EDWIN P. NOYES.

I hereby certify that I measured 47½ bushels barley, raised on the above named ground. WILLIAM CHASE.

ROOT CROPS.

There were ten entries made with the committee; two of Potatoes by Messrs. Knight of Newbury and J. J. H. Gregory of Marblehead.

Five of Onions by Messrs. Perkins of Newbury, Noyes of Newbury, Raddin of Peabody, Gregory of Marblehead, Goodwin of Ayers Village, Haverhill.

One of Squashes by David Warren of Marblehead.

Two of Mangold Wurtzels by E. R. Mudge of Swampscott, and Gregory of Marblehead.

One of Cabbage by Gregory of Marblehead.

The Committee met six times to view the several crops. The statements of the method of cultivation, amount of the several crops and the cost of producing the same are annexed, and the Committee award as follows :—

To J. B. Knight of Newbury, for his crop of Early Rose Potatoes, the first premium of $10.00.

To E. R. Mudge of Swampscott, for his crop of Mangold Wurtzels, the first premium of $10.00.

To Justin Noyes of Newbury, for his crop of Onions, the first premium of $10.00.

To J. J. H. Gregory of Marblehead, for his crop of Cabbages, the first premium of $10.00.

To David Warren of Marblehead, for his crop of Squashes, the first premium of $10.00.

The Committee would suggest that all entries of Root Crops for premium shall be made on or before the fifteenth of September, and all statements in regard to the crops shall be sent to the Chairman of the Committee before the first day of November. We would also suggest that the Society furnish a form of statement to be filled out by each competitor for premium.

We have viewed the crops entered this year at considerable trouble and expense; as the entries were made so far apart we were obliged to visit the same locality several times, when one visit would have been sufficient; and the statements were not all received until the 12th of November. The Committee met on the 8th of November, and made out their report, and awarded the premiums, but of course they could not award the premiums unless they had the statement, which the rules of the Society require.

Charles Perley, B. F. Huntington, Charles W. Ordway — *Committee.*

Statement of J. B. Knight.

Statement to the Essex Agricultural Society of a crop of Potatoes, for premium, raised by J. B. Knight of Newbury, 1879.

The crop of 1878 was grass; no dressing applied, ground ploughed in fall of 1878, seven inches deep, at a cost of two dollars per acre; soil, a clayey loam. Twenty-five loads of common barn-yard manure, thirty bushels per load, hauled on in the Fall of '78, before ploughing, and left in piles to be distributed in the spring, manure valued on the ground at $1.50 per load.

The manure was spread on the ground in the spring and skim-ploughed in, three inches deep, and harrowed with wheel harrow at a cost for spreading, ploughing and harrowing, of four dollars per acre; planted the first and second weeks in May, in rows three feet apart, hills two and one-half feet in the rows, with small or medium sized potatoes, one whole potato in a hill. The seed was selected from the pile of small potatoes not suitable for merchantable potatoes, about twelve bushels used per acre, valued at the time at one dollar per bushel; cost of planting, exclusive of seed, two and one-half dollars per acre. They were twice hoed, and cultivator used between the rows, at estimated cost of four dollars per acre; harvested first part of October; estimated cost, six dollars per acre.

In my remarks of last year, I gave it as my opinion that it was decidedly best to plant whole potatoes rather than to cut them, and my experience this year decidedly confirms that opinion. It is certain that the first start of the roots and sprouts must come from the potato without aid from the soil, and the substance of the potatoes must furnish the material for this first start, and I think that the whole potato will furnish this material better than the cut one, and give a vigorous, stocky shoot, whereas the cut potato gives a much weaker looking shoot, and one point towards a good crop is gained by the whole potato, which, I think, is of advantage.

This certifies that I have measured a piece of land for

James B. Knight, on which potatoes were grown the past season, that contained eighty-eight rods.

NATHANIEL LITTLE, JR.

I hereby certify that I measured the potatoes grown on the piece of land above mentioned, and there were 203 bushels of merchantable potatoes. JEREMIAH MAHONEY.

Statement of E. R. Mudge.

DEAR SIR: In accordance with our understanding as to the mode of reporting my method of cultivating an acre of land in raising a crop of Mangold Wurtzels, I herewith submit my statement, premising it by saying that three years since I underdrained the land with tile, and the next summer sowed oats and turned them in, leaving the land until the following year before taking a crop from it of potatoes raised with ten cords of barn-yard manure to the acre. This season it has been cultivated in the following manner:—

Plowed twice with one horse and two men at $4.50 per day,	$9 00
10 cords Manure,—2-3 of Wool Waste at $4.00, and 1-3 of Barnyard Manure, 6.00, average cost, $4.66 per cord,	46 60
Hauling and spreading manure, 2 horses and 5 men, at $1.50 per day each, one day and a half,	15 75
Cultivating twice, 2 men and horse, 1-2 day,	2 25
Weeding and hoeing, 16 days labor, $1.50,	24 00
Pulling and topping, 12 days,	18 00
Harvesting, 2 horses and 2 men, 2 days, $1.50 each,	12 00
	$127 60

The labor per acre for opening the drain was 33 cents, done by contract. Cost of tile and filling in I cannot give; the account is not at hand.

The product this year has been 78 horse-cart loads, averaging 1,849 pounds per load or 72 tons. The value of Mangold Wurtzels, as feed, every farmer must determine for himself; in

this locality, it may be assumed that their value for milch cows can be safely put at six dollars per ton. This would give

	$432 00
Less expense of cultivating,	127 60
	$304 40

Interest on cost of tile drains and value of land and buildings, with wear of farm-tools, &c., should be deducted. But with all fair allowances, the crop is a profitable one.

The piece of land on which my beet crop was grown measures 91 yards by 53 17-91, which, if my figures are correct, give 43,570 square feet, or a trifle over an acre of ground.

Statement of Justin Noyes.

Statement concerning a crop of onions raised by Justin Noyes of Newbury, in the year 1879.

The half acre of ground, on which was raised the crop of onions I have entered for premium, has been planted with onions for the two years preceding the present, with the exception of about six rods, which has been planted with corn, and has been manured with about sixteen loads (30 bushels each) barn-yard manure each year. It is a clay loam of fair quality. In the fall of 1878, about sixteen loads (30 bushels) of barn-yard manure was ploughed in about six inches deep. The first of May the ground was harrowed with Randall harrow, brushed and raked and sown with two pounds of the Danvers Yellow Onion seed. The crop was hoed four times and weeded three times. The crop was harvested about the first of October, and measured four hundred and forty-six and one-half bushels. The cost of cultivation is estimated as follows :—

Rent of land,	$5 00
Manure,	30 00
Ploughing,	1 50
Harrowing, raking and sowing,	6 00
Amount carried forward	$42 50

Amount brought forward,	$42 50
Hoeing and weeding,	25 00
Harvesting,	12 00
Topping,	12 00
Total expense of cultivation,	$91 50
446½ bushels at $1 per bu.,	$446 50
Cost of cultivation as above,	91 50
Profit,	$355 00

This is to certify that I measured one-half acre of land for Justin Noyes, on which grew the onions he entered for premium, and find it correct. ALFRED POOR.

FAIRBANKS' STANDARD SCALES.

Two loads of Onions from J. Noyes, weighed October 4, 1879. Gross, 4430, 3410 pounds; Tare, 1695, 1230 pounds; Net, 2,735, 2,180 pounds.

HORACE PLUMER, *Weigher.*

Statement of J. J. H. Gregory.

The land on Marblehead Neck, where my piece of Cabbage was grown this season, was planted in 1877 to onions, (I have been informed, in both 1877 and 1878,) but being very handy to the sea shore received so heavy a crop of rotten kelp that the seed failed to grow, when the party then carrying it on planted it to a late crop of potatoes. The soil is a strong, gravelly loam. My team gave it a thorough ploughing, about seven inches deep, towards the close of May, when it was well harrowed and marked off into hills four feet apart. In each of these hills a heaping handful of the best guano was spread, being made to cover a surface of about a square foot, when it was very thoroughly worked into the soil, the rate being 650 pounds per acre; the land being in good condition, this was the only manure used. The guano cost me, delivered, $20.50. The seed was planted about May 20. The crop received three cultivatings and three hoeings. The seed used was of the

Marblehead Mammoth Cabbage variety, and a quarter of a pound planted half an acre. I should put the cost of production as follows :—

Ploughing and harrowing,	$2 50
Manure,	20 50
Applying manure and planting,	4 00
Seed,	1 00
Three harrowings,	5 00
Three hoeings,	9 00
Hiring land,	6 00
	$48 00

The crop was in very large and solid heads, averaging of the size of a half bushel measure or larger. As the largest portion of them was for seed purposes, I have no report of their market value to make, though cabbage has ruled low this fall. If I marketed them it would not be in the fall but in the spring, when cabbages always bring paying prices. Any one may see in Boston market, while I now write, good cabbages sold at less than the cost of production, right in the face of the fact that the late planted crop must be quite short, owing to the long dry spell, and hence ultimately, probably within a few weeks, after the refuse of the early crop is out of the market, cabbage, by the law of supply and demand, must rise in value.

Statement of David Warren concerning crop of Turban Squashes entered for premium.

The crop of 1877 was cabbages, the manure applied was equal parts of stable and sea manure, about six cords to the acre. The crop of 1878 was potatoes, the same kind and quantity of manure as year before; the soil is a black, sandy loam, with clay subsoil.

For the crop of 1879, plowed the land the middle of May, about six inches deep; the manure applied was stable manure about eight cords to the acre ; cost four dollars per cord, hauled

on the land in the spring, and spread and cut in with a wheel harrow; then the land was smoothed with a common harrow, and furrowed out eight feet apart, and planted in hills eight feet between each hill, with shovelful of same kind of manure in each hill mixed in the soil. Cost of ploughing and preparing land for seed, eight dollars. Planted with squashes the last week in May. Amount of seed, one and one-half pounds, cost two dollars and a quarter, cost of planting, fifty cents. Cultivated three times with a horse hoe, and hoed twice by hand, at a cost of four dollars and seventy-five cents. Gathered the crop the 23d of September, laid in heaps till the 3d of October; cost of harvesting, five dollars.

One load was weighed by the town weigher of Swampscott; the others loaded as near as possible in same wagon, making nine tons and six hundred pounds of merchantable squashes, and about fifteen hundred pounds of refuse squashes on the piece.

Swampscott, Nov. 1, 1879.

This certifies that I measured a piece of ground on which the above crop was grown, and there were one hundred and thirty-five rods in said piece. A. Rowe.

GREATEST PRODUCE OF MILK FROM HERD OF COWS.

No. 3 under the head of Dairy, reads: "For the greatest produce of milk on any farm in proportion to the number of cows producing it, not less than four, from April 1, 1878 to April 1, 1879, statement to be made of the exchanges made, manner and expense of food, use made of milk, and such other facts as will illustrate the entire management, special regard being had to the mode in which the account is kept."

One entry only was made, by J. D. W. French, Esq., of North Andover, of his herd of cows (8 cows and 4 heifers.)

Your Committee, carefully examining for the limited time given them, the written statement made by Mr. French, as also his printed statement of milk record of his whole herd, from which statement we there only learned the quantity or

yield in pounds, and also the number of days in milk, but the time there given was for the year 1878, not from April 1, 1878 to April 1, 1879, and in the statement we find no information of the "manner and expense of food," or "use made of the milk."

Your Committee, bearing their instructions in mind, came to the conclusion that the statement was quite indefinite by not complying with the rules of the Society, and not feeling that we should be justified in stepping aside from a strict adherence to them, as we should be opening a door not easily closed, unanimously concluded not to make any award, but to refer the whole matter to the Trustees.*

John Price, D. B. Burnham, Charles Perley—*Committee.*

Statement of J. D. W. French.

"For the greatest produce of milk, on any farm, in proportion to the number of cows producing it, not less than four," &c., diploma and premium, $25, I enter my herd of Ayrshire cows and heifers. The following is the milk record of each animal during the year 1878:—

Name.		Age.	No. days in milk.	Yield in lbs.
Roxanna,	1816 A. R.,†	8 yrs.	245	6,688.
Primrose,	711 "	13 "	242	6,836.
Lillie Douglas,	549 "	14 "	268	4,130.
Lilac Douglas,	2721 "	5 "	256	4,262.
Sophie Douglas, 2d,	3205 "	5 "	298	3,913.
Privet,	3107 "	4 "	294	4,795.
Nina Lyman,	4611 "	4 "	318	6,631.
Julia,	2578 "	6 "	268	6,213.
Dolly Mops,	3434 "	3 "	365	5,270.
Jenny Burke, 2d,	3556 "	3 "	275	4,408.
Mary Brand,	3662 "	3 "	122	2,270.
Roxanna, 4th,	4605 "	2 "	99	2,202.

*NOTE. At a meeting of the Trustees

Voted, That the premium of $25 be awarded to Mr. French, provided he furnish a statement substantially according to the rules. SEC.

†A. R. stands for "Ayrshire Record," published by the Ayrshire Breeders' Association.

The last named heifer and Sophie Douglass, 2d, were sold in October, 1878.

Eight cows and four heifers averaged 4801.5 lbs. for the year. Omitting record of last two heifers, which were in milk only 122 and 99 days, the average would be 5316.4 lbs. One quart equals 2.15 lbs. The record closed Jan. 1st, so that the actual number of days each animal was in milk is not given, but only the number of days in milk during the year 1878.

M. Brand and Roxanna, 4th, dropped their first calves and their record is a short one. M. Brand, Julia, N. Lyman, Privet, Lillie and Lilac Douglas, Roxanna and Primrose were still in milk when the record of 1878 closed.

Roxanna dropped a calf Apr. 30, 1878. Calf raised; sold in Oct.
Primrose " " May 1, 1878.
Lillie D. " " Sept. 15, 1878. Calf raised.
Lilac D. " " Nov. 23, 1878. Calf raised; sold in Dec.
Privet " " Aug. 27. 1878.
Nina L. " " Feb. 15, 1878.
Julia " " Mar. 13, 1878.
J. Burke, 2d, dropped a calf Feb. 1, 1878.
M. Brand dropped calf Aug. 24, 1879. Calf raised; sold in Sept.
Roxanna, 4th dropped calf July 13, 1878. Calf raised.

Dolly Mops was in Milk during the whole year.

Julia was purchased and did not come into my possession until April 12th.

The milk was sold at the farm at 4 cents per quart in Winter and 3 cents in Summer.

The feed was very moderate, the chief object being to keep the animals in good breeding condition rather than to force them to make a large milk record. In Summer, the feed was pasturage, sometimes, in addition, fodder corn or grass; in Winter, the daily ration was hay, 8 to 10 qts. Roots (Mangolds), and 2 qts. grain (generally cob meal). The whole amount of feed was divided into three fodderings.

The milk was weighed morning and night daily.

All but four of the cows were bred and raised on the farm.

NEW VARIETY OF WINTER APPLES.

It was stated in your last report that James W. Bailey of Bradford, had applied for the $100 premium, offered by the Society for a new variety of winter apples.

Early in May last we saw Mr. Bailey, who informed us that his apples were all gone; they were so good, as he said, they had used them all up. Since that time we have heard nothing from him.

About a year ago another new variety of winter apples came to our notice, by Mr. Alfred Ordway of Bradford. They grew, as he said, on a young tree in his pasture. At the Agricultural meeting in Haverhill, early in May, a specimen of the apples was presented and consumed by the company, who can, of course, judge of their good quality.

The tree fruited again the present year, and a specimen of the fruit was presented at the fair. They look much like the Baldwin, and Mr. Ordway thinks their keeping quality is about the same as the Baldwin. He asks for the Society's premium. The writer is of the opinion that the bearing quality of the tree and the keeping quality of the fruit are so little known, the subject should be deferred until further information can be had.

At the Trustees' meeting in June (which, as we think, was about the middle of the month) a specimen of apples was presented, which were part of a quantity of apples Gideon R. Lucy of Newbury had purchased for the Boston Market, he being a large dealer in apples. They were eaten by the company and made a favorable impression as to their freshness and good quality. Soon after, I wrote to Mr. Lucy for information about them. He called on me in the summer and again this fall, and I saw him at the fair; have the following information as near as I can now recollect.

He purchased the apples in New Hampshire, a lot of about thirty-five barrels. They grew within the borders of our own County of Essex. They were said to be a new kind of ap-

ples without name, having originated by grafting the Baldwin and Russet together over and over again, how many times we are not informed, as the man is not living who performed the act of grafting; therefore, the particulars are not known. When Mr. Lucy purchased the apples their late keeping qualities were not known, therefore they were considered by the owner of minor value.

They were carried to Boston the day of the Trustees' meeting, for which he received from $5.00 to $5.50 per barrel, when at the same time Russets were selling at from $2.50 to $3.00 per barrel.

We have in our possession letters from four fruit dealers in Boston, who had some of those apples from Mr. Lucy, all of whom testify strongly in their favor, and say that to them they are a new variety. A specimen of this new kind was presented at the fair, and near by on another table there was a plate of a variety called the red russet; their appearance was nearly the same, rusty and red, indicating what they are represented to be, a mixture of the russet and baldwin. We are not personally acquainted with the red russet. One person says they are not a late keeping winter apple, but about like the baldwin for keeping. Another person had them, but used them up or disposed of them and knew not how late they will keep. It matters but little to the community whether they originated as represented or not, if the the quality of the apple is what it is represented to be and a good bearer, it will be a valuable acquisition to our orchards.

It seems to us to be a fact that the apples were remarkably fresh and of superior quality for that season of the year.

Now, from whence did they originate? Was it by grafting over and over again as above named, or did they come up spontaneously as other varieties have done, or are they the Red Russet, as some think they are? If they originated by grafting it is worth knowing, as other varieties can be produced in the same manner.

If the late keeping qualities of the Runnel's apple can be

mixed with the good qualities of the Baldwin, we think they would become a valuable variety. It is the opinion of many apple growers that the fruit from the scion does partake, to some extent, of the natural stock. If so, may it not by a long continued interchange become so mixed as to become another variety ?

We hope the experiment will be tried, although it may take a long time to do it, and would suggest whether it could not be done more expeditiously by budding than by grafting. We also hope, hereafter, to hear more about the nameless apple.

May it not be possible that there may be in our midst other varieties of late keeping winter apples, like those nameless ones, whose value is not known. A person said to me that he had a kind of good apple that would keep until late in the spring, without decay ; he knew not their name nor how long they would keep, as he had but few and used them up. We would suggest to such to look after the one hundred dollar premium, and we hope that some valuable new varieties may come to our knowledge as the result.

We received a letter from a gentleman in Bucksport, Maine, who had seen our former report, expressing strongly the necessity of a new variety of winter apple that will preserve its good quality until July, thus showing that the interest in the cause is increasing and widespread.

Joseph How, *Chairman.*

SEEDLING POTATOES.

BRADFORD, Oct. 29, 1879.

To the Trustees of the Essex Agricultural Society;—

GENTLEMEN: Your Committee on Seedling Potatoes would report that most of the gentlemen composing said Committee were on the same Committee two years since, at which time, Mr. Rufus Goodwin of Haverhill (Ayer's Village) presented for premium a seedling potato, raised from a ball of the Early Rose. This seed was planted in 1873. Your Committee, in 1877, made a full report and advised a further trial. A particular reference is hereby made to that report (as constituting a part of this report) which may be found in the Transactions of the Society, published in 1877, page 84.

In accordance with the recommendation contained therein, Mr. Goodwin placed in the hands of one of the committee, Mr. Levi Emery, of Lawrence, some of those potatoes from which he, Mr. Emery, raised many bushels the past season. Mr. Emery stated to your committee, at its meeting in Lynn, on the day of the Annual Fair, that the yield was very good, and the potatoes large and fair; that the cooking qualities were equal to or better than the Early Rose, and that when crushed on the plate, were whiter; that his experiment was conducted with a great deal of care, and that, in his judgment, the said seedling was, at least, one week earlier than the Early Rose, from which it originated and which it much resembles. The only marked difference consists in much larger indentations for the eyes. This peculiarity your Committee noticed two years since, and also in the potatoes raised by Mr. Emery and presented at the Fair in Lynn the present season.

In view of all the evidence presented, your Committee unanimously agreed to recommend that the premium of $25.00 be given to Mr. Rufus Goodwin for his Seedling Potato, which it names Goodwin Seedling. All of which is respectfully submitted.

GEO. COGSWELL, *Chairman.*

TREADWELL FARM.

The Committee report that they have received from Mr. Philbrook, foreman for Thomas W. Pierce, Esq., the following statement of the crops on the farm the present year:

704 bushels Potatoes,	20 bushels Beans,
436 " Corn,	15 tons Hay (English),
17 barrels Apples,	17 " " (Meadow),
1165 Cabbages,	4 " Hungarian.

Strawberries sold, $104 25.

25 cords of Manure were applied to the land.

Benjamin P. Ware, Charles P. Preston, *for Committee.*

ESSAYS AND REPORTS.

The Committee on Essays and Reports award a premium of $10 to Francis H. Appleton, of Peabody, for his essay on the "Cultivation of Indian Corn."

For Reports, they award the first premium of $10 to John O'Brien, of Bradford, for his report on Pears; second premium of $8 to David W. Low, of Gloucester, for his report on Vegetables; and the third premium of $6 to J. D. W. French, of North Andover, for his report on Milch Cows.

The Committee generally find it difficult to decide upon the merits of Reports, and are not always clear as to the class of premiums to be awarded to a report, the value of which principally consists of the "statements" of parties other than the one responsible for the report as a whole. Under the assumption, however, that the author of the report has, at considerable pains, not only solicited the statements rendered, but given general direction to the line of inquiry, they awarded the second and third premiums as above stated.

Only one Essay was offered—that of Mr. Francis H. Appleton, of Peabody. It partook more of the nature of a statement and report based upon the writer's own experience, than of a formal essay, and the committee considered that it was entitled to the highest premium the Society allows on Reports, which is equivalent to the second premium for Essays.

N. A. Horton, D. E. Safford, C. P. Preston—*Committee.*

ESSAY ON THE CULTIVATION OF INDIAN CORN.

BY FRANCIS H. APPLETON.

PEABODY, Nov. 3d, 1879.

As I reported last year what had been my experience, after carefully preparing and harvesting my crops of Indian Corn, and as they were favorably received, I now send in a report of the results, cultivating the same crops the past season.

I had two fields of corn this year; one consisting of 1 acre, 4440 feet, where corn was grown in 1878, with fertilizer alone, and which was then fully reported and published by the Society; last season the field also included a strip on the east side, which was this year used for garden vegetables; consequently, what was then about 1 1-4 acres is now reduced in size as above stated.

Last Autumn the piece was harrowed across the rows to level them before it was then plowed; this Spring, 4½ bags of Stockbridge Corn Fertilizer were sown broadcast and worked in with Randall Harrow; immediately after this, on May 16th, the seed and 2½ bags of same fertilizer were sown at same time by the Ross Horse Planter. The seed was of the eight-rowed variety.

Total cost of raising crop, including interest and taxes, seed, labor in planting, tending and harvesting, ...	$25 96
Cost of 7 Bags Fertilizer, ...	31 50
	$57 46

I have harvested 77½ bushels of first quality and 10 bushels of second quality, corn-on-cob; also 1 ton 765 pounds of tops, and 2 tons 1522 pounds of butts and husks, making 4 tons 287 pounds of stover. This yield of corn is at the rate of about half of, and the stover nearly the same as, last year's crop.

If corn stover, well dried, is worth $6 00 a ton, then my corn-on-cob from this field cost me 37 2-10 cents a bushel; or, shelled corn about 74 4-10 cents a bushel.

The other field contained 2 acres 2668 feet. It had been in grass for a number of years, and when the Committee on Farms made me a visit in 1872, I had a crop of potatoes on a part of it, a portion of which had been fertilized by a mixture recommended by Dr. J. R. Nichols, while the remainder were grown on stable manure. As it was in very poor condition I plowed it last Autumn; this Spring 9 bags Stockbridge Corn Fertilizer

were sown broadcast and worked in with Randall Harrow ; immediately after this, on May 17th, the seed and 4 bags of same fertilizer were sown at same time by the Ross Horse Planter. The seed was of the eight rowed variety.

Total cost of raising crop, including interest and taxes, seed, labor in planting, tending and harvesting, ...	$48 56
Cost of 13 bags Fertilizer, ...	58 50
	$107 06

I have harvested 136 bushels of first quality and 24 bushels of second quality, corn-on-cob ; also, 2 tons 1172 pounds of tops and 5 tons 1442 pounds of butts and husks, making 8 tons 614 pounds stover.

If corn stover, well dried, is worth $6.00 a ton, then my corn-on-cob from this field cost me 45½ cents a bushel ; or, shelled corn about 91 cents a bushel.

It is my present intention to continue to plant the smaller of these two fields with fertilizer next year, and I will report the result.

I ought also to say that I was greatly troubled by crows eating the freshly sown seed and digging up the early growth, on the about 22 974 feet at the west side of the larger of these fields. On this part came nearly all of the second quality of corn, thereby reducing the total yield considerably.

I state this fact to partly explain the very high cost per bushel of shelled grain, and to show one of the many annoyances to which every one is liable, and which may tend to make land and fertilizer (or manure) appear much less good and effective than they may be.

Various questions arise in connection with all crops, and in this case let me consider what is best to do with our stover. In my locality it is almost a universal custom to cut the tops of the corn earlier than the rest, cure them separately, and get them housed before the remainder of the crop is touched. Some

farmers, who have only a small quantity, may make it a practice to feed it without drying. The corn and butts are then harvested together, and the ears are husked at once to prevent heating. Some people, however, husk their corn from the stalks in the field before they are cut, throwing the ears into carts and carrying them directly to the bins.

All this is different from ways that are adopted in other localities, in neighboring counties. There the whole stalks are cut at the ground, with the ears on them, and are strongly placed in well-ventilated stacks where they can be fully exposed to the drying influence of air and wind. This is done when the ears have become well glazed. When well dried these whole stalks are taken to the barn to be husked and separated.

I find this latter method most recommended by writers on Agricultural subjects, and reasons are advanced why it will produce the best quality of stover. These reasons are explained by the following, taken from L. F. Allen's "American Farm Book:"—

"If there be no danger of early frost, the corn may be suffered to stand until fully ripe; though if the stalks are designed for fodder, they should be cut when the grain is well glazed, and this should be done in all cases when frost is expected. Scarcely any injury occurs either to leaf or grain if the corn be stooked, when both would be seriously damaged from the same exposure if standing. The stalks of corn should never be cut above the ear, but always near the ground, and for this obvious reason: The sap which nourishes the grain is drawn from the earth, and passing through the stem enters the leaf where a change is effected analogous to what takes place in the blood when brought to the surface of the lungs in the animal system; with this peculiar difference, however, that while the blood gives out carbon and absorbs oxygen, plants, under the influence of light and heat, give out oxygen and absorb carbon. This change prepares the sap for condensation and conversion into grain. But the leaves which thus digest the food for the grain are above it, for it is while passing down-

ward that the change of sap into grain principally takes place. If the stalk be cut above the ear, nourishment is at an end. It may then become firm and dry, but it is not increased in quantity, while, if cut near the root, it not only appropriates the sap already in the plant, but it also absorbs additional matter from the atmosphere, which contributes to its weight and perfection."

Objection is there made to cutting off the tops while they are green as being injurious as stated above, which seems most reasonable; but after the corn crop has turned brown, I can see no harm in taking off the tops, and the ears do not seem to be well glazed until the stalks have begun to turn brown. My reason for topping corn is that I can dry that part more readily, and because I have a sufficient quantity of tops not to need the butts, which I have no good market for, and because I believe it is best for me to cut the butts into short pieces with a hay cutter and use them for bedding, on their way to increase my manure heap.

At the last meeting of the Society at Lynn, several members discussed the advisability of appointing a committee or committees of the Trustees to visit and report for our transactions upon the various Agricultural Fairs, etc., that may be held in the County during the coming year, and thus give the people of the whole county an opportunity to benefit by the experience of its cities, towns or districts.

Much good might thus come by adopting such a plan, and by requesting from all such committees carefully prepared reports of the Fairs which they are called on to attend. I should not advise modelling them after all the reports made to our State Board by its delegates to County Fairs, for, while the reports of these delegates seem to have become of an almost regularly established form, and of but little interest to the farmer, I know that all the local Fairs of our County contain much that could be reported upon in a shape that would be of much value and interest as a printed report. I would strongly and respectfully suggest that the Trustees consider such a plan at their next meeting. To start it, I would take the liberty to

suggest that some such vote as the following be passed by the Trustees. This would not *necessitate* the appointment of any such delegates, but would leave it with a responsible and interested committee who would readily meet to act if and when they thought it advisable. I would suggest that it be :—

Voted, That the President, Secretary and Treasurer constitute a Committee with power to appoint one or three members of this Society as delegates, who shall be requested to attend each and any local Agricultural Fairs, Exhibitions or Institutions in this County, as said Committee shall see fit to designate, and to report to this Society any and all information that shall seem to them valuable for publication in our "Transactions." This Society to be at no expense on account of such delegates.

I had proposed to write a few words upon "Ensilage" as it is called in Europe, or the curing of corn fodder in pits as food for milch cows, but as I have not the time to do so, I would say that it must be done with much care and expense, as well as on a large scale, to be successful, so that probably cannot come within reach of the smaller sized farms of New England, unless some one person could prove it to be of true value, and enough desirable to make a business of supplying the farmers.

E. H. PAYSON, TREASURER, IN ACCOUNT WITH THE ESSEX AGRICULTURAL SOCIETY.

1878.	Dr.	
September.	To balance of former account.....	$711 24
October 8.	To Bank Dividends....	377 80
October 25.	To State Bounty.....	600 00
December 2.	To amount refunded on State Tax ...	200 95
December 20.	To Net Receipts of Exhibition at Lawrence, 1877.....	6 63
	To Receipts of Exhibition at Lawrence, 1878.....	1687 25
1879.		
April.	To Bank Dividends.....	370 30
July 24.	To Treadwell Farm.....	500 00
September 19.	To Essex Railroad Coupons, 1 year..	42 00
	To amount of Unclaimed Premiums..	158 00
	To New Members Assessments.....	78 00
		$4732 17

1879.	Cr.		
September.	By amount of Premiums and Gratuities awarded by the Trustees....		$1774 00
	By Secretary's account.....		235 18
	By Expenses of Exhibition at Lawrence paid by Committee.....		1374 45
	By Expenses of Exhibition paid by Treasurer..		48 89
	By bills paid as follows :		
	Printing.....	$437 55	
	Blank Books.....	15 25	
	Rent.....	25 00	
	Labor and Breakage...	5 80	
			483 60
	By Balance to new account.....		816 05
			$4732 17

FUNDS BELONGING TO THE SOCIETY.

5 shares First National Bank of Danvers, par.....	$375 00
16 shares Warren National Bank, cost..... ...	1595 40
8 shares National Exchange Bank, Salem, par.....	800 00
18 shares First National Bank, Salem, cost.	1914 66
12 shares Mercantile National Bank, Salem, cost....	1226 50
23 shares Merchants National Bank, cost..... .	1189 50
15 shares South Danvers National Bank, Peabody...	1471 25
3 shares National Revere Bank, cost.....	377 62
42 shares Asiatic National Bank, cost	1281 25
18 shares Salem National Bank, cost.....	2000 00
Essex Railroad Bonds.....	700 00
Cash on hand.....	816 05
	$13,749 23
Last year this sum was.....	13,642 42
Gain.....	104 81

EDWARD H. PAYSON, Treas.

Salem, Sept., 1879.

Salem, Dec. 9th, 1879.

I have this day examined the foregoing account, and find it to be accurately cast and the vouchers to be correct, and that the funds are as stated in the schedule.

G. L. STREETER, Auditor.

OFFICERS OF THE SOCIETY

FOR THE YEAR 1879-80.

PRESIDENT.

BENJAMIN P. WARE, of Marblehead.

VICE PRESIDENTS.

GEORGE B. LORING, of Salem.
JAS. J. H. GREGORY, of Marblehead.
THOMAS K. LEACH, of Topsfield.
THOS. C. THURLOW, of West Newbury.

SECRETARY.

CHARLES P. PRESTON, of Danvers.

TREASURER.

EDWARD H. PAYSON, of Salem.

HONORARY TRUSTEES.

JOSEPH HOW, of Methuen.
WILLIAM SUTTON, of Peabody.

TRUSTEES.

Francis R. Allen, Hamilton; Doane Cogswell, Bradford;
Charles C. Blunt, Andover; Zachariah Cole, Wenham;
O. S. Bailey, Amesbury; W. H. B. Currier, Salisbury;
Oliver S. Butler, Georgetown; Alden C. Estes, Rockport;
Dudley Bradstreet, Topsfield; Henry W. Foster, Beverly;
John H. Cheever, Manchester; J. P. Foster, North Andover;
John S. Cressey, Rowley; George W. Gage, Methuen;

Geo. L. Hawkes, Lynnfield;
Samuel Hawkes, Saugus;
Romulus Jaques, W. Newbury;
James P. King, Peabody;
Aaron Low, Essex;
David W. Low, Gloucester;
H. F. Longfellow, Newbury;
Charles H. Nichols, Merrimac;
Ansel W. Putnam, Danvers;
John P. Palmer, Swampscott;
Thos. T. Paine, Marblehead;
M. A. Plummer, Newburyport;
John M. Pearl, Boxford;
Eldred S. Parker, Groveland;
E. P. Richardson, Lawrence;
John L. Shorey, Lynn;
Nathaniel Shatswell, Ipswich;
David Stiles, Middleton;
Richard Webster, Haverhill;
Horace C. Ware, Salem.

NEW MEMBERS, 1879.

Edw. Adams, 3d, N. Andover;
Benj, F. Barnes, Boxford:
John G. Barker, Lynn;
Wallace Bates, Lynn;
J. W. Blodgett, Saugus;
C. O. Beede, Lynn;
M. Bermingham, Salem;
J. Harlow Colby, Salisbury;
T. Jefferson Coolidge, Manchester;
James B. Curwen, Salem;
Alfred Cross, Lynn;
John Dane, Jr., Hamilton;
Edwin C. Farwell, Lynnfield;
Alfred Greene, Salisbury;
William Hilton, Bradford;
Charles Hazeltine, Bradford;
Abel S. Harriman, Groveland;
T. D. Halley, Lawrence;
J. B. Knight, Newbury;
W. F. King, Lynn;
Augustus P. Loring, Beverly;
J. G. McAllister, Lawrence;
Dudley A. Massey, Danvers;
E. Mansfield, Peabody;
George E. Marsh, Lynn;
Thomas P. Nichols, Lynn;
Peter McNeal, Lynn;
G. A. Newhall, Lynn;
H. P. Noyes, Newbury;
John Pearl, Boxford;
Thos. W. Paine, Marblehead;
H. A. Pevear, Lynn;
Samuel S. Pratt, Danvers;
Henry Riley, North Andover;
Jonas M. Rollins, Danvers;
Jos. E. Stanwood, Topsfield;
Peter D. Smith, Andover;
Thaddeus W. Tyler, Lynn;
Augustus Verry, Danvers.

☞ Any citizen in the County may become a member by paying the sum of three dollars to increase the permanent

funds of the Society, and he will receive a certificate of his membership from the Secretary. No fines or assessments are ever imposed. Members are entitled to the free use of the Library, which is kept in Plummer hall, Salem, and a copy of the Transactions each year. All ordained ministers of the Gospel residing in the County, and editors of newspapers, published therein, are entitled to the privileges of the Library.

LIST OF PREMIUMS, &c.

FAT CATTLE.

Amos C. Hathaway, Marblehead, first premium,	$12 00
Henry Gardner, Peabody, second premium,	10 00
Town of Peabody, third premium,	6 00

BULLS.

S. F. Newman, Newbury, Ayrshire, first premium,	10 00
J. W. Blodgett, Saugus, second premium,	6 00
Francis H. Appleton, Peabody, Jersey, second premium,	6 00
J. P. Palmer, Swampscott, Jersey, gratuity,	5 00

MILCH COWS.

John S. Ives, Salem, Grade Ayrshire, first premium,	12 00
A. P. & R. Alley, Marblehead, Short Horn, second premium,	6 00
G. C. Noyes, Lynn, Grade, first premium,	12 00
George K. Pevear, Lynn, Jersey, making most butter in a week, first premium,	12 00
Charles J. Peabody, Topsfield, second premium,	6 00

HERDS OF MILCH COWS.

J. W. Blodgett, Saugus, first premium,	18 00
Charles J. Peabody, Topsfield, third premium,	10 00

HEIFERS.—*Thoroughbred. Class* 1.

J. W. Blodgett, Saugus, Ayrshire, two years old, first premium,	12 00
H. A. Pevear, Lynn, Jersey, two years old, first premium,	12 00
J. W. Blodgett, Saugus, Ayrshire, two years old, second premium,	6 00

HEIFERS.—*Native or Grade. Class 2.*

John S. Ives, Salem, Heifer in milk, three years old, first premium,	12 00
John A. Jones, Lynn, Heifer in milk, three years old, second premium,	6 00
Sidney F. Newman, Newbury, Heifer two years old, first premium,	6 00
John S, Ives, Salem, Heifer two years old, second premium,	4 00
S. F. Newman, Newbury, Heifer Calf, first premium,	5 00
" " " second "	3 00

TOWN TEAMS.

Citizens of Lynn, Team of Horses, first premium,	30 00

WORKING OXEN AND STEERS.

Henry Gardner, Peabody, Oxen, first premium,	12 00
R. S. Bray, Newbury, Oxen, second premium,	10 00
J. J. H. Gregory, Marblehead, Oxen, third premium,	8 00
Horace P. Noyes, Newbury, Steers, first premium,	10 00
W. W. Perkins, Newbury, Steers, second premium,	8 00

STEERS.

Byron K. Farnham, No. Andover, one pair two years old, first premium,	6 00
Byron K. Farnham, No. Andover, 6 mos. old Calves, first premium,	4 00
Benjamin & Ralph Farnum, No. Andover, one pair two years old Steers, second premium,	5 00
Benjamin & Ralph Farnum, No. Andover, yearlings, first premium,	5 00

STALLIONS.

George W. Rogers, Salem, Stallion 5 years old, first premium,	15 00
Charles S. Clark, Salem, Stallion 5 years old, second premium,	10 00
H. M. George, Saugus, third premium,	8 00
J. J. Downing, Andover, Stallion 3 years old, first premium,	10 00
Alley & Crowninshield, Marblehead, special premium,	25 00

BROOD MARES.

E. & A. Mansfield, Peabody, first premium,	15 00
Charles O. Beede, Lynn, second premium,	10 00
J. H. Preble, Lynn, third premium,	8 00

FAMILY HORSES.

H. M. George, Saugus, first premium,	15 00
John Grout, Danvers, second premium,	10 00
Daniel G. Todd, Rowley, third premium,	8 00

FARM AND DRAFT HORSES.

R. S. Bray, Newbury, first premium,	15 00
J. A. Ilsley, Georgetown, second premium,	12 00
W. A. Dane, Hamilton, 3d premium,	10 00
A. P. & R. Alley, Marblehead, fourth premium,	6 00

PAIRS OF DRAFT HORSES.

Edward P. Perley, Danvers, first premium,	15 00
A. P. & R. Alley, Marblehead, second premium,	10 00
Jonas Rollins, Danvers, 3d premium,	5 00

COLTS.—*First Class.*

Reuben Alley, Marblehead, Colt 4 years old, first premium,	12 00
John Gibney, Salem, Colt 4 years old, second premium,	8 00
Amos F. Breed, Lynn, Colt 4 years old, third premium,	5 00
G. A. Newhall, Lynn, Colt 3 years old, first premium,	10 00

COLTS.—*Second Class.*

H. M. George, Saugus, Colt 2 years old, first premium,	8 00
J. P. Palmer, Swampscott, Colt 2 years old, second premium,	5 00
Daniel G. Todd, Rowley, Colt yearling, first premium,	6 00

SWINE.—*Long Bone.*

Asa T. Newhall, Lynn, Weaned Pigs, first premium,	10 00
M. Birmingham, Salem, second premium,	6 00
S. E. Marsh, Lynn. Breeding Sow, first premium,	10 00
William Gaynon, Lynn, Breeding Sow, second premium,	6 00
M. Birmingham, Salem, Boar, first premium,	10 00

SWINE.—*Small Bone.*

T. Jefferson Coolidge, Manchester, Breeding Sow, first premium,	10 00
Robert G. Buxton, Peabody, Breeding Sow, second premium,	6 00
Robert G. Buxton, Peabody, Boar, first premium,	10 00
Daniel Carlton, North Andover, Weaned Pigs, second premium,	6 00

SHEEP.

James Marsh, Peabody, 10 best Sheep, 3 years old, first premium,	8 00

William G. Horton, Ipswich, Cotswold Buck, first premium,	8 00
Otis F. Putnam, Danvers, Cotswold Buck, second premium,	4 00

PLOUGHING—*Double Ox Teams.*

Joseph Goodridge, West Newbury, first premium,	12 00
J. L. Farnham, North Andover, second premium,	10 00
Jaques & Bray, Newbury, third premium,	9 00
J. J. H. Gregory, Marblehead, fourth premium,	8 00

PLOUGHING.—*Single Ox Teams.*

J. J. H. Gregory, Marblehead, first premium,	10 00
R. T. Jaques, Newbury, second premium,	7 00
W. E. Merrill, Newbury, third premium,	5 00

PLOUGHING.—*With Two Horses.*

J. W. Blodgett, Saugus, first premium,	12 00
Asa T. Newhall, Lynn, second premium,	10 00
Poor & Maguire, West Newbury, third premium,	8 00
R. S. Bray, Newbury, fourth premium,	6 00
Paul T. Winkley, Jr., Newburyport, 5th premium,	4 00

PLOUGHING.—*With Three or More Horses.*

A. P. & R. Alley, Marblehead, first premium,	10 00

PLOUGHING.—*Swivel Plough.*

Edward P. Perley, Danvers, first premium,	10 00
Jonas Rollins, Danvers, second premium,	6 00
Wilkins & Batchelder, Middleton, third premium,	5 00

PRODUCE OF MILK.

J. D. W. French, North Andover, Greatest Produce of Milk from Herd of Cows, first premium and Diploma,	25 00

GRAIN CROPS.

Wm. W. Perkins, Newbury, Barley Crop, first premium,	10 00

ROOT CROPS.

J. B. Knight, Newbury, Potato Crop, first premium,	10 00
E. R. Mudge, Swampscott, Mangold Crop, first premium,	10 00
Justin Noyes, Newbury, Onion Crop, first premium,	10 00
J. J. H. Gregory, Marblehead, Cabbage Crop, first premium,	10 00
David Warren, Marblehead, Squash Crop, first premium,	10 00

SEEDLING POTATOES.

Rufus Goodwin, Haverhill, first premium,	25 00

ESSAYS.

Francis H. Appleton, Peabody, second premium,	10 00

REPORT OF COMMITTEES.

John O'Brien, Bradford, first premium,	10 00
David W. Low, Gloucester, second premium,	8 00
J. D. W. French, North Andover, third premium,	6 00
Awarded by Committee on Agricultural Implements,	43 00
" " " Carriages,	39 00
" " " Dairy,	28 00
" " " Poultry,	32 00
" " " Bread, &c.,	17 00
" " " Fruits,	289 00
" " " Flowers,	57 00
" " " Vegetables, &c.,	149 50
" " " Counterpanes and Rugs,	36 00
" " " Leather Goods,	15 00
" " " Manufactures, &c.,	20 00
" " " Fancy Work, &c.,	50 50
" " " Children's Work,	14 00
Total,	$1,717 00

RECAPITULATION.

FARMS.

Amount awarded to Ploughing,	$132 00

FARM STOCK.

Fat Cattle,	$28 00	
Bulls,	27 00	
Milch Cows,	48 00	
Herds of Milch Cows,	28 00	
Heifers,	66 00	
Town Teams,	30 00	
Working Oxen and Steers,	48 00	
Steers,	20 00	
Stallions,	68 00	
Brood Mares,	33 00	
Carried forward,	396 00	

Brought forward,	396 00	
Family Horses,	33 00	
Farm and Draft Horses,	43 00	
Pairs of Draft Horses,	30 00	
Colts,	54 00	
Swine,	74 00	
Sheep,	20 00	
Poultry,	32 00	
		682 00

FARM PRODUCTS.

Dairy,	$28 00	
Fruit,	289 00	
Flowers,	57 00	
Vegetables,	149 00	
Milk,	25 00	
Bread and Honey,	17 00	
Grain Crops,	10 00	
Root Crops,	50 00	
Seedling Potatoes,	25 00	
All other objects,	253 00	
		903 00
Total,		$1,717 00

RESOLUTIONS.

The Committee appointed to prepare resolutions of respect for deceased members, through Rev. O. S. Butler of Georgetown, Chairman, submitted the following :—

It has been ascertained that several of our members have deceased during the past year, and among those who have manifested great interest in the society and agriculture, we find the names of Ariel H. Gould of Topsfield, trustee, and John Lee, of Manchester, ex-trustee.

Mr. Gould was for many years a member of our society, and at the time of his death one of our most active trustees, and was more widely known than most members of the society,

his business bringing him in contact with many of the farmers of the County, and being a man of the strictest integrity, combined with social qualities of the highest order, he was most highly appreciated, both in the town where he lived and where his death is most sincerely lamented, and also by the members of this society whose interests he labored to secure and by whom his death is deeply regretted.

Mr. Lee was for many years an active and influential member of the society, and for many years held the office of trustee, which office he honored by a constant and faithful discharge of his duties. Mr. Lee was largely engaged in agricultural pursuits, cultivating one of the largest farms in the town of Manchester, and being a man of upright character and of noble and generous impulses, he was respected and honored by his townsmen, and very highly esteemed by his brethren and associates of this society, of which he was an honored and useful member, and by whom his death is most sincerely mourned.

The following resolutions were submitted and unanimously adopted :—

Resolved, That the members of this society have learned of the death of Mr. Ariel H. Gould and Mr. John Lee, two worthy members of the society, with sincere regret, and would hereby record the expression of their profound sorrow at the great loss which they, in common with the community at large have sustained by their decease.

Resolved, That we shall ever retain a lively remembrance of their many admirable traits of character, their genial and gentlemanly manners, their public spirit, their active interest in all that pertained to agriculture in general, and their special interest in the Essex Agricultural Society.

Resolved, That a copy of these resolutions be sent to the families of these deceased members.

CONTENTS.

Address of Hon. George B. Loring 3
Original Hymn 22
Cattle Show and Fair 23
Report on Fat Cattle 24
Bulls 24
Milch Cows 26
Herds of Milch Cows 36
Heifers 40
Town Teams 41
Working Oxen and Steers 41
Steers 41
Stallions 42
Brood Mares 42
Family Horses 43
Farm and Draft Horses 44
Pairs of Draft Horses 45
Colts 45
Swine 45
Sheep 47
Poultry 47
Ploughing—Double Teams 49
Ploughing—Single Teams 50
Ploughing—with two Horses 50
Ploughing—three or more Horses 50
Ploughing with Swivel Plough 51
Agricultural Implements 52
Carriages 54

Report on Dairy..... 55
Bread and Honey..... 57
Pears..... 57
Apples..... 75
Peaches, Grapes and Assorted Fruits..... 77
Flowers..... 79
Vegetables..... 83
Counterpanes and Rugs..... 111
Articles manufactured from Leather..... 111
Manufactures and General Merchandise..... 112
Fancy Works and Works of Art..... 113
Children's Work..... 115
Improved Pasture and Waste Lands..... 116
Grain Crops..... 118
Root Crops..... 119
Greatest Produce of Milk from Herd of Milch Cows.. 126
New Variety of Winter Apples..... 129
Seedling Potatoes..... 132
Treadwell Farm..... 133
of Committee on Essays..... 134
Essay by Francis H. Appleton..... 134
Treasurer's Report..... 140
Officers of the Society 142
New Members..... 143
List of Premiums 144
Resolutions..... 149

TRANSACTIONS

OF THE

Essex Agricultural Society,

IN MASSACHUSETTS,

FOR THE YEAR 1880,

WITH THE

FIFTY-EIGHTH

ANNUAL ADDRESS,

—BY—

DAVID W. LOW,

OF GLOUCESTER.

PUBLISHED BY ORDER OF THE SOCIETY.

SALEM:
OBSERVER STEAM PRINTING ROOMS,
1880.

ADDRESS.

MEMBERS OF THE ESSEX AGRICULTURAL SOCIETY.

Ladies and Gentlemen:—For the first time, I stand before a public assemblage to address them. When the Trustees of this Society extended to me, so unanimously and urgently, an invitation to address you at this time, surprised and gratified at such an unexpected honor, without giving it the serious consideration it required of me, I accepted it, then regretted it, and now may repent it.

Having, however, put my hand to the plow, it was useless for me to look back with vain regret. I have therefore set its point in the soil of the present, and however shallow and uneven may be the furrow, I trust that I may turn over some new strata of information or sub-soil of buried facts, that may enrich, if not your future field, that of your sister industry.

With such an unskilful ploughman you cannot expect, or receive, the harvest you have gathered from the many cultured, practical, and eloquent men who have preceded me.

I have taken for my subject:—The Pioneer Industries of Essex County,—Planting and Fishing, their past and present success. As the fishermen were first to occupy the field, I will consider their industry first, for had it not been for them, your farmers of Essex County would not be here to-day.

In the records of the Great Council of New England is

found, May 1st, 1622, "that order is given for patents to be drawn for the Earl of Warwick and his associates, the Lord Georges, Sir Robert Mansell, Sir Ferdinando Georges." This order is regarded as referring to a division of the country from Bay of Fundy to Narragansett Bay, among twenty associates, in which the region about Cape Ann fell to Lord Sheffield, who, on the 1st day of January, 1623, gave by Charter, "to Robert Cushman and Edward Winslow," of the Plymouth Colony, "a certain Tract of Ground in New England in a known place there, commonly called Cape Anne, in which charter provision was made against disturbing any English inhabitant already there; provision was also made for 'Scholes, Churches, Hospitalls,' and the maintenance of Ministers, Officers, and Magistrats."

Previous to any action by the Plymouth Colony towards a settlement of this region, Rev. John White, of Dorchester, England, having interested some merchants and other gentlemen there in forming a company, sent a small ship of fifty tons to plant in New England the foundation of a colony for the more successful prosecution of fishing voyages. Their ship came to the usual fishing grounds, but arriving late in the season did not obtain a full fare, and "the Master thought good to pass into Mattachusetts Bay to try whether that would yield him any." Vessels heretofore had not fished so far West. Succeeding better than he expected and finding the beautiful harbor of Cape Ann so handy, he landed his little colony of fourteen men there, with their necessary provision and outfit, to commence a plantation, then with full cargo of fish he sailed away.

*Mr. White tells the whole story in few words, in the

*Babson's History of Gloucester.

"Planters' Plea, a pamphlet published in London in 1630," why this colony was established at Cape Ann. He states that "about the year 1623, some western merchants, who had continued a trade of fishing for cod and bartering for furs in those parts, for divers years before, conceiving that a colony planted on the coast might further them in their employments, bethought themselves how they might bring that project to effect; and communicating their purpose to others, alleging the conveniency of compassing their project with a small charge, by the opportunity of their fishing trade in which they were accustomed to double-man their ships, that, by the help of many hands, they might despatch their voyage and lade their ship with fish while the fishing season lasted, which could not be done with a bare sailing company. Now, it was conceived, that the fishing being ended, the spare men that were above their necessary sailors might be left behind with provisions for a year; and when the ship returned the next year, they might assist them in fishing, as they had done the former year; and, in the meantime, might employ themselves in building, and planting corn, which, with the provisions of fish, fowl, and venison that the land yielded, would afford them the chief of their food. This proposition of theirs took so well that it drew on divers persons to join with them in this work; the rather, because it was conceived that not only their own fishermen, but the rest of our nation that went thither on the same errand, might be much advantaged, not only by fresh victual, which that Colony might spare them in time, but withal, and more, by the benefit of their minister's labors which they might enjoy during the fishing season; whereas, otherwise being usually upon those voyages nine or ten months in the year, they were left all the while without any means of instruction

at all. Compassion towards the fishermen, and partly some expectation of gain, prevailed so far, that for the planting of a Colony in New England, there was raised a stock of more than three thousand pounds, intended to be paid in five years, but afterwards disbursed in a shorter time."

This attempt to establish a permanent settlement of fishermen and planters on Cape Ann failed—Mr. White giving as a reason for the failure "the ill choice of the place for fishing. First, that no sure fishing place in the land is fit for planting, nor any good place for planting found fit for fishing, at least near the shore; and secondly, rarely any fishermen will work at land; neither are husbandmen fit for fishermen, but with long use and experience." Words as true to day of the American fishermen, as when uttered, 250 years ago.

You will hardly agree with him as regards "the ill choice of the place for fishing," when to-day Gloucester, "the harbor of Cape Ann," ranks, as the representative fishing port of the world, and the centre of the fishing business of America. With a fleet of vessels numbering 459, of over 5 tons burthen, in 1879, of which 9 were hauled up, and 18 lost during the year without realizing any stock, leaving 432 actively engaged in the various branches of the business for a part or all the year, a total tonnage of 25,471 tons, employing 4703 fishermen. Original value of the fleet $2,688,272; present value, $1,223,413. The "gross stock," or catch, amounted to $1,799,566 in value, which, after deducting "stock expenses," which are bait and ice with expenses procuring it, is divided equally between the crew and the vessel, one-half of one per cent. to the Widows' and Orphans' fund is paid from the crew's part. In 1879, the crews of the vessels over 20 tons averaged $176 each, for the time they were employed; and those in

boats under 20 tons and above 5 realized an average of $184.25 each.

These vessels caught 116,034 bbls. of Mackerel, salted and fresh, and 60,920,558 pounds of other fish, which includes 11,336,716 lbs. in "gross weight," of Halibut, which realized to the vessels $376,378 for net weight, or heads off.

There were also 345 boats and dories, of $10,000 value, under 5 tons, employing 468 fishermen, who caught $96,500 worth of fish, sold mostly fresh, or 7,426,000 lbs. There were also employed 79 men, 74 dories, and 2399 lobster pots in catching 2538 bbls. of lobsters worth $5000. In curing the fish, 43,567,922 lbs. of salt were used, valued at $48,473.

A total of 878 vessels and boats employed in Cape Ann fisheries, manned by 5250 fishermen, which caught 116,034 bbls. of mackerel and 68,346,558 lbs. of other fish, besides the lobsters, their whole catch realizing when landed $1,901,066.

375,000 boxes were used in transporting fresh and salt fish, and boneless codfish. 20 firms are engaged in preparing and boxing boneless codfish, the demand for which has so increased during the past ten years that 15 million pounds will be prepared the present year, the preparation and packing of which, after the fish are cured, employing from 200 to 300 men and some women. 3000 tons of fish waste was sold in 1879 at about $7.50 per ton, to enrich the soil.

Even with this showing of its importance and value, this location, unless the great industry, now rapidly concentrating there, receives the attention and protection from the National Government, which it is entitled to and surely needs, may yet become an "ill choice of place," not, however, from any fault of locality, but from the inconsiderate statesmanship of those who should have protected its industry.

When we again look at Mr. White's reasons for failure, and consider the farms of Gregory, Ware, Patch and others on the seashore, and when at West Gloucester, within two miles and a half of where the first fishing stage was erected on Cape Ann, one "planter," or farmer, has this year cut from 1 1-16 acres of land, 5.4 tons of first rate English hay from two crops, and still has another to cut, which good judges call *at least* one ton more, making his hay crop from that field at the rate of six tons to the acre; another has raised from 147 square rods, 230 bushels of merchantable potatoes, besides several bushels of small; while still another has a seedling peach tree, the growth of his wife's planting, which ripens its fruit as early as the third week in July, of such superior quality that it sells readily, far above any Southern peaches then found in the market. All of which conclusively proves that with a little more money and perseverance this first attempt would have been successful, and Cape Ann would have had the honor to head the list of distinguished men that have been Governors of Massachusetts with the name of Roger Conant, one who some historians believe to be entitled to that place.

The pioneer ship of the Dorchester Company was also the pioneer in a foreign trade from Essex County, she having sailed from Cape Ann with a full cargo for Spain, in 1623, the first foreign shipment from an Essex County port, which grew afterwards to a large and profitable trade. 51,300 quintals of fish, almost wholly the products of Marblehead and Cape Ann fisheries, were shipped from this county to Bilboa alone during the year 1767, bringing back valuable cargoes in return, which foreign trade in fish direct from our ports, or via the fishing grounds to that and other Mediterranean ports, continued into

the present century.* Boston has now taken the foreign trade from Salem and other ports in our county, and Gloucester has absorbed the fisheries from Marblehead and other ports, Marblehead having had 251 fishing vessels in 1775, against 75 at Cape Ann; while in 1879, Marblehead (Customs District) had only 123 of over 5 tons burthen, against 459 at Gloucester.

The Plymouth Colony, which had given no particular attention to the fisheries, previously "sent a ship in 1624, called the Charity," from that colony to erect salt works and a fishing stage at Cape Ann. Before the arrival of their ship the following year, another, sent by merchants and adventurers from England, hostile to the pilgrims, had entered the harbor and seized the stage and other provision made by the Charity's colony the year previous, and the "Stage Head," (afterwards fortified in the Revolutionary war and wars of 1812 and 1861), was barricaded with hogsheads, and the rightful owners, under Capt. Miles Standish, were kept at bay. Then ensued a war of words, bloodshed being only arrested by the prudence and moderation of Roger Conant, the Governor of the Dorchester colony, and Capt. Wm. Pierce, "a goodly man and most expert mariner of the pilgrims' ship," who induced the pilgrims to retire and build a new stage elsewhere. With the close of this year's fishing, the Plymouth people abandoned Cape Ann as a fishing station, although both their vessels, "well laden, went joyfully home together, the master of the larger ship towing ye lesser ship at his sterne, all ye way overbound."

"Discouraged by their losses and the ill success of their

---

*153,500 qtls. of fish, worth $537,250, were shipped to European ports, and 118,000 qtls. of fish, worth $306,800, were shipped to West Indies annually; just before the Revolutionary War, from Essex county, a total of 273,500 qtls., $844,050 in value exported, Marblehead shipping 120,000 qtls. and Gloucester 77,500 qtls.—*Pitkin's Commerce of the United States*, 1816.

plantation, the Dorchester company abandoned their design of planting a permanent plantation or colony at Cape Ann. At the end of their third year measures were taken for selling their ships and breaking up their settlement, having lost almost all the capital they had invested in the enterprise."

"In planting colonies," says Mr. White, "the first stocks employed that way are consumed, although they serve as a foundation to the work." It was thus with the planting of the colony at Cape Ann: the stock was consumed, but the foundation work was laid, on which now rests a leading state, of one of the greatest of nations. Roger Conant, with some of the best men of this colony, remained until the following year, when they moved to Naumkeag, now Salem. The crooked and irregular path taken by the "kine," along by the seashore, when driven to Naumkeag, tradition says, afterwards became the travelled road between Salem and Gloucester, now occupied by so many summer residences.

Conant remained at Naumkeag, locating in that portion now Beverly, where his plantation had less rocks, no doubt, with more congenial, though no better, soil than he had found at Cape Ann. Here he died at the age of 86, after a long, useful and honorable life, being one who "the lack of titles will never take from his name the high and honorable place it should hold in the annals of our Commonwealth, as one who had always preferred the public good before private interests: and this in his closing years he praised God that he had done."

Through the encouragements and promises of Mr. White, who has been called "the father of the Massachusetts Colony," Conant and others had remained at Naumkeag, and they were no doubt rejoiced on the 6th of September, 1628, when the

ship with Endicott and company made its appearance, which had been sent with the resolution to erect "a new colony on the old foundation." The next year it was followed by others, and in 1630 by the great emigration under Winthrop, which firmly and permanently planted the colony of Massachusetts.

"Marbleharbour," now Marblehead, became a fishing port, so celebrated even then, that in 1629, in a letter written that year, it was stated that "sixteen hundred bass were taken in one draught, while the schools of mackerel were so numerous as to extort exclamations of astonishment from all beholders." "In 1633, Matthew Craddock, the Governor of the Massachusetts company, and others had fishing stages at Marblehead, and sent their vessels and men there to catch and cure the fish, returning with their cargoes at the close of the season."

Gloucester became an incorporated town in the 2d month of 1642, "and it is an interesting fact that within the first year of her incorporation Gloucester built her first vessel." Gloucester also has the honor of building *the first schooner*.

*"Capt. Andrew Robinson had built in 1713 a vessel which he had masted and rigged in a peculiar manner, the same as the schooners of the present day. When launched, the peculiar skipping motion she made as she glided into the water from the stocks caused one of the by-standers to exclaim, '*O, how she scoons!*' Robinson instantly replied, as dashing a bottle of rum against her bows, '*a scooner let her be.*' Since that time the same class of vessels have been called Schooners." And would it not be well for some antiquarian to ascertain if the skipping motion she made when she entered the water did not obtain for her master the name of *skipper*, a title still continued in the fishing schooners. "About 70 of

*Babson's History of Gloucester.

these 'scooners' were owned in Gloucester in 1741, and nearly all of them engaged in fishing on the Grand Banks, where, after securing their cargo they would go to Lisbon, Bilboa or Cadiz, and bring back wines, salt, etc."

Just previous to the Revolutionary war, 542 vsseels were engaged in the fisheries from Massachusetts, of which 326 belonged in Essex County, distributed as follows:—Marblehead, 140; Cape Ann, 75; Salem, 34; Beverly, 30; Manchester, 25; Ipswich, 12; and Newbury 10; employing over 2500 men in 17,000 tons of shipping, actually engaged in fishing, whose products amounted to £150,000 in value. The Revolutionary war and other causes reduced this fleet from 326 sail to 188 in 1790.

The fisheries suffered severely in the latter part of the last century, and the first of this, by wars and disasters, the fishermen becoming extremely poor, while judging from the prices paid in Lynn in 1817, I should think the "planters" might have been in pretty good condition. As the source of information gives a short item comparing the prices of 1817 with 1829, I will give it you entire as I copied it from Gloucester Telegraph of 1829, as follows:

"The Lynn Mirror shows that the price of living is reduced less than one-half since 1817, while labor is as highas it was ten years ago."

	1817.	1829.
Flour per barrel,	$16.00	$6.25
Flour per 14 pounds,	1.30	50
Meal per bushel,	2.00	70
Molasses per gallon,	70	34
Tea, Y. Hyson per lb.,	1.60	90
Coffee,	25	14
Sugar,	18	12
Candles,	22	13

In 1819, the United States, finding the fishing industry impoverished and declining, passed a Bounty act, *which should have been styled Indemnity Act*, giving to each vessel under 30 tons $3.50 per ton, for three and a half months' actual employment codfishing. Vessels over 30 tons, carrying not less than ten men, received $4 per ton, provided it did not exceed $360 for any one vessel, three-eighths going to the vessel and five-eighths to the crew. This act, (which was repealed at close of war of late Rebellion), gave a new impulse to the business, although Gloucester in 1828 had increased her fleet to 164 schooners and 38 boats. Marblehead in 1831 had 57 vessels in Cod and Mackerel fishery, their catch amounting to $160,490, each fisherman averaging $213.52 for eight months' fishing, mostly on the Grand Banks, which fishery was not then followed by Gloucester vessels.

In 1820 mackerel fishing, as a business, was prosecuted and has continued with greatly varying success ever since. The mode of catching mackerel, until the past ten years, was by hand lines; now they are caught by boats from the vessel, which row around a "school" when they show themselves on the surface of the sea, and throwing a seine, which, if successful, encloses the fish in a basin of net work, the bottom of the seine being pursed up; in this way hundreds of barrels are sometimes taken at a single haul.

The Georges' Bank cod fishery commenced in 1830, from which dangerous shoal the largest and best codfish are taken. This fishery is prosecuted with hand lines, the tide running there so swift as to require frequently over one hundred fathoms of line to reach the bottom. In 1836 the fresh halibut fishery commenced, and is now one of Gloucester's specialties; to what extent the business has reached, I have already shown,

except the amount sold smoked, which is very large. In 1870, this fishery was commenced on the coast of Greenland with success, and has been followed more or less since. The halibut caught there is fletched, that is, strips taken from the fish, clear of bone, to be dried and smoked. 280,000 lbs. were brought from there last year by two vessels; only one prosecuting it this year. In 1876, halibut were caught on trawls in water 250 fathoms, or over quarter of a mile deep, having been found for the first time in the deep water off Georges' Bank. Trawling for them or for codfish is pursued now on nearly all the banks.

The Mackerel fishery in British waters has been almost wholly abandoned by vessels from this county and also I think from the State. It having been found unprofitable to prosecute it so far from home when better fishing is found on the American coast.

Herring voyages have been prosecuted since 1856, to supply our cities with cheap food and our fishing vessels with bait, the herring having been caught by the fishermen of Newfoundland and sold to our vessels, where they are frozen, and in that state brought home in bulk, like potatoes, by the cargo. After the award on the Washington treaty, an attempt was made by American fishermen to catch their own bait with their own seines, and having got them full, the only day that they had "struck in," their seines were destroyed and their voyages broken up by a mob of the natives, and the business has been wholly abandoned except by purchase, and but few vessels engaged, compared with what there had been. Recently vessels there from the Banks after bait, while catching squid in one of the coves, were mobbed by some 250 natives, their lives threatened if they did not desist; in one case in-

juring two of the crew and driving off the vessel, and in another, while the master was ashore to buy bait, taking possession of the vessel, heaving up her anchor and hoisting her sails, when she narrowly escaped shipwreck, being saved from the rocks only by the utmost exertions of her crew, who had hid below, and her master, who seeing there was trouble, had returned; the mob, becoming frightened at the danger of the vessel, had, in the meantime, left her to her fate.

Many think that the American fishermen are always getting the nation into trouble. *How few know that the Nation it is that is getting the fishermen into trouble.* Right here let us look at the matter, for it is a serious one to the nation, as well as to this industry.

Before the war of the Revolution, by the treaty of Paris in 1763, the fishermen of all the British colonies had "equal rights" granted them with those of Great Britain to fish in any waters except around a few islands reserved by the French, and to land upon the shore for curing fish, drying nets, etc. Then followed the Revolutionary war, when, by the treaty of 1783, a division of the country was made with Great Britain, and all the rights heretofore enjoyed by American fishermen were continued to the fishermen of the United States with slight and unimportant alterations. They had obtained what they were entitled to, after seven long years of struggle, viz.: Independence of, and equal rights with, Great Britain in the sea fisheries of America.

Then followed the war of 1812, by a declaration of war by the United States, which declaration was claimed by the English, revoked all our rights and privileges to the inshore fisheries of the British provinces. The American Commissioners denied that it had done so, and instead of having the point in

dispute settled then and forever, or fighting it out, as had been the question of the right claimed by Britain to stop and search our vessels on the high seas for British seamen, *they shirked the responsibility*, and the treaty of 1814 was made without mention of the fisheries.

The American government claimed, and the fishermen used, the rights confirmed to them by the treaty of 1783, the same as before: with what result? They were harrassed and troubled by British cruisers, who made captures for *alleged* infringement of their fishing laws. What did our government do? Fight for their rights? No; they appointed another commission to settle it. And how was it settled? Another treaty was made, called the Treaty of 1818, a treaty which took away almost all the fishermen's rights of 1783, making him next to an outlaw in British ports. Hear it! After providing for right of fishery on a portion of the southern, western, and a portion of the northern coast of Newfoundland and coast of Labrador, rights now of little value, and the shores of Magdalen islands, listen to what *the American Commissioners inserted* in that treaty:—

"*And the United States hereby renounces forever* any liberty heretofore enjoyed or claimed by the inhabitants thereof, to take, dry, or cure fish on or within three miles of any of the coasts, bays, creeks, or harbors of his Britannic Majesty's dominions, not included within the before mentioned limits. "*Provided, however*, that the American fishermen shall be admitted to enter such harbors for the purpose of shelter, of repairing damages therein, of purchasing wood, and of obtaining water, and for no other purpose whatever. But they shall be under such restrictions as shall be necessary to prevent their taking or curing fish therein, or in any other manner whatever abusing the privileges hereby secured to them."

What sagacious and far-seeing statesmen to *gratuitously* renunciate rights of the fishermen as they did do! for Richard Rush, in a letter to the Secretary of state, July 18, 1853, states, "*We inserted the clause of renunciation. The British Plenipotentiaries did not desire it.*" What has been the result to American fisheries and the Nation's welfare? I will tell you. The British construction put upon where the three mile limit should be measured from, and of the conditions of the *proviso*, as means by local laws to drive American fishermen from their harbors and their coast, has been a constant source of irritation and perplexity to our government ever since. Numerous vessels have been seized for *alleged* violation of the treaty. Two subsequent treaties have been *forced upon* our country disastrous to American fisheries, and $5,500,000 has been paid *and nothing settled yet.* You ask, what has been gained by this lack of judgment (to put it mild), in our statesmen of 1814 and 1818? This is the true answer,—*Nothing.* The increased profits on exports to provincial ports, during the "Reciprocity Treaty," hardly compensated for the loss of duty on their imports. The advantage of open ports and free fishing given us on their part, was more than balanced by their profits on trade with our vessels, together with free fishing and free ports to them in our waters.

Under the "Washington Treaty," the amount of duties remitted on their importations of fish, is *four times as much yearly* as all the fish caught by American fishermen within three miles of their shores *is worth, when sold in the ports of the United States;* making no allowance for cost of catching them, which *was more than they sold for.** The American fish-

*The average yearly fleet of American vessels fishing in British waters since the

ermen have no more right to-day to enter a provincial port, except under that *rigid proviso* of the treaty of 1818, than they had before the "Washington Treaty" was made, (unless they can yet claim the right under the treaty of 1783). British cruisers or officials can seize a vessel now, as they have before, for merely purchasing bait in their ports, and *the treaty of Washington cannot prevent it.*

There cannot be any reciprocity in fish. Great Britain now *cannot deliver what she has sold.* When she sells the bread from her fishermen's mouths, they will prevent its delivery, as they have at Newfoundland, where the poor natives depended, to keep them from starving, mainly upon the purchases by American vessels of herring, squid and caplin, for food or bait.

You ask, what proof have you of these statements? My reply is, that I have them from the most reliable sources, too lengthy and too dry for this occasion. One of much importance in relation to the *decrease of vessels* of 20 tons burthen and upwards, in this county, and in other custom districts of the State, between 1873 and 1879, engaged in catching fish for food is too important to be left out, and I here give it:

Washington treaty took effect, including 1879, has been 136, their total catch of mackerel, outside and inside the treaty limits, averaged 32,633 barrels yearly, the average total value of which when landed in the United States was $250,849; value of vessels and outfits, $716,000. Total value of vessels, outfits and catch, $966,849, showing that the yearly average amount of the fishery award with the remitted duties on Canadian fish added (upwards of $350,000), which our Government is paying annually for *the privilege of trying to catch fish swimming in the sea* within three miles of the shore is equal or more, yearly, than the value of all the American vessels, with all their outfits and catch, that fished in British waters anywhere.

Does any one wonder that such treaties excite indignation, when made directly against the protests of American fishermen, and ostensibly for their interest, when it is their destruction.

District.	Number of Vessels.	Tonnage.
Essex County	115	5,338.17
Boston & Charlestown	22	1,282.64
Plymouth	18	762.19
Barnstable	95	5,793.68
Nantucket	2	115 82
Total Decrease,	252	13,292.50

A loss of over one quarter of the whole fleet of 1873 (of twenty tons burthen and upwards), throwing at least 2500 men out of active employment in the fishing vessels, with half as many more at least on land, causes an annual loss in the bare catch in the fisheries of Massachusetts of over one million dollars, as compared with 1873, nearly one half of which comes from Essex County. This is a loss yearly to this State alone of much more than the average yearly amount of the fishery award paid by our Government, with the remitted duties on Canadian fish added.

In the five years previous to the "Reciprocity Treaty" of 1855, Gloucester, as well as all other fishing ports, shows a large increase in valuation per capita; a large falling off during the time of that treaty; an increase afterwards between 1866 and 1873, and again a large decrease under the "Washington treaty." Essex built less fishing vessels since the Washington treaty, yearly, than it has any previous years during the past forty, having built an average of 43 vessels *yearly* between 1845 and 1855, and 14 yearly since the Washington treaty.*

*16 Fishing Ports, including Gloucester, *gained* an aggregate average valuation for each inhabitant during the five years previous to the Reciprocity treaty, $22 yearly, Between 1855 and 1866, during that treaty, $3.20 each, yearly. Between 1865 and 1870, after that treaty expired, their average gain was $10.60 each, yearly. 13 ports, the others having changed to manufacturing, had gained an aggregate average of $10.60 each, yearly. Between 1870 and 1875, they had gained 40 cents each, yearly, against an average gain of $6 to each inhabitant of the whole State; since 1875, losing. Gloucester has lost in aggregate average valuation, between 1873 and 1880 inclusive, over $8, yearly, for each inhabitant.

As there may be some curiosity to know how the Canadian fleet has stood since the last treaty, compared with that of this State, I will state that between 1873 and 1878, by their Fish Commissioner's reports, is shown *a gain* of 489 "vessels," 19,858 tons, 2990 men, and 5171 "boats," 11,195 men,—*a total of* 5660 *vessels and boats, with* 14,185 *men added to their fisheries in five years.*

Some may ask, Of what interest is this to the farmers? I will tell you. *First*,—the fishermen are producers, and add to the general wealth. *Second*,—They are large tax payers, for they consume annually a large amount of merchandise which would pay a high duty to import. *Third*,—They furnish employment for a great many mechanics and laborers, who, with their families, have to be fed.

You can form some idea, when you consider the *yearly consumption in the Gloucester fishing vessels alone*, of agricultural products, which are: of Cotton, in sails, nets and lines, 1,662,888 lbs.; Rice, 25,920 lbs.; Sugar, 128,640 lbs.; Molasses, 29,376 gals.; Flour, 6,912 bbls.; Beef, 4,104 bbls.; Pork, 864 bbls.; Pork Shoulders, 1,512 bbls.; Lard, 13,072 lbs.; Butter, 210,248 lbs.; Beans, 1,720 bush.; Peas, 864 bush.; Dried Apples, 64,800 lbs.; Potatoes, 35,826 bush; Onions, 2,592 bush.; Beets, 1,296 bush.; Turnips, 1728 bush.; Cabbages, etc., $12,960 worth; Vinegar, 2,592 gals.; Fresh Beef, 86,400 lbs.

When you think of what this consumption of such products alone has been decreased from what it was in 1873 by the decrease in the fleet, do you not believe that England should be called upon and required to pay for every cent of damage caused by her failure to perform her part of the contract. She can not, however, and will not compensate sufferers for the irritation, the vexatious delays, and indirect damage she has

done to the business. Nothing short of the abrogation of the treaty, with renewal of duties on her fish, will bring her to terms.

I am glad, for one, that this administration, both State and National, understand the importance of the interests at stake, and have shown backbone in the matter. The members of Congress and others from the fishing district, as also from the "heart of the Commonwealth," have rendered valuable assistance toward having the fishery clauses of the Washington treaty abrogated, with the duties on fish renewed. When this is done, then will the American fishermen keep the American markets supplied, by increasing their fleet and fishermen, instead of decreasing them. But now our government is allowing a foreign marine to build itself up by entering our ports, duty free, to supply our markets and drive out a home industry that has stamped upon the records of our country, from the time of the first plantation on Cape Ann to the present time, its services upon sea and land, so that it should upon a future page be recorded, "*The industry that furnished such men has been blotted out of existence by the acts of the National Government.*" When such a record is made, will it not be an everlasting disgrace to American statesmanship?

It was my intention to have traced the progress of the planters as I have that of the fishermen, but time and space did not admit. You, being better acquainted with the farmers' industry than I am, will pardon me for the time I have devoted to your sister industry, and if I have awakened in you, and by you in the farmers of our land, a fresh interest in the success of American fisheries, I shall feel that in addressing you I have no just cause for repentance.

There have been as great changes in the mode of farming

and in the crops raised in this county as there have been in the fisheries. In looking back to the transactions of this society fifty years ago, I find how much interest was taken then in the culture of the mulberry tree and the raising of silk worms, $25 being the first of five premiums offered by the Society for the best nursery of White Mulberry trees for the making of silk. Then three premiums of $30, $20 and $10 were offered for the best plantations of 1000 trees on not less than an acre, in the third year's growth from seed, the offer continuing for five years on each of the following kinds, viz.:—White Oak, Locusts, Larch, White Ash and Chestnut.

Among the "Hints to Farmers," a record is given of crops raised at different times, in different parts of the county, to the acre, such as Wheat, 26 bushels; Indian Corn, 117 1-4; Barley, over 52½; Potatoes, 518½; Carrots, 900; Mangel Wurtzel, 1340; Ruta Bagas, 688; Beets, 783; English Turnips, 814; Onions, 651; which are considered pretty good crops in hese days. Then in those years the ladies received premiums for such articles as "List Carpeting for rooms and stairs." "Grass Bonnets, made from meadow grass of very delicate manufacture," "Silk stockings and lace veils, samplers and knit purses," one premium being for "a Bonnet made of the down of milk weed."

In 1835, $15 was offered as a premium "for the best barrel of cider produced at the exhibition of 1836, made within the county. If found worthy of the first premium, to be used at the table without any additional payment."

Orchards of apples and pears were then in their infancy, when compared with the present. I am informed by one of the largest shippers of apples that last year, the "off year" for apples, 200,000 barrels, the product of Essex county,

worth over half a million of dollars, were shipped to foreign countries. and about the same will be shipped this year; and as fruit picking time has arrived, let me tell you what he says about picking apples for shipping. He says, "Pick your apples before they are fairly ripe, so that they will wilt a little, and handle them very carefully like eggs, making two liberal culls as you put them in your barrels, looking out not to rob the cider heap on the second one; barrel them under your trees as you pick them; shake them down carefully, pressing in the head with considerable pressure, so that an apple will not move in the barrel. After being headed up, turn them down on the bilge, and in teaming, handling or storing, keep them on the bilge all the time, because there is less weight on the apples. On the same day they are picked put them in the cellar, throwing open the door and windows occasionally, never picking them over until the barrel is opened for use; every time they are handled they sweat afterwards and sweating promotes decay. Let a man put 25 barrels of apples in his cellar and set the barrels on their head, and keep picking them over as fast as they rot, he will be picking out rotten apples all winter with but few sound in the spring; but let him put 25 barrels, picked, handled, and stored on the bilge in the cellar, and let them alone, as I recommend, they will all come out sound in the spring, with perhaps here and there an apple rotted so dry as not to affect any other. Baldwins and Russets are best for shipping, with Hubbardstons for early shipments."

With this statement I will close, by expressing my heart-felt wish for future success to the pioneer industries of Essex county.

Sung on the occasion of the address before the Essex Agricultural Society, at their sixtieth annual exhibition, in Lynn, September 20th, 1880.

HARVEST HYMN.

BY MISS MARCIA M. SELMAN.

"And some an hundred fold."—On every side
We see the witness of the written Word
Amid the glad earth's harvest time, and lift
Our hearts in praise to Thee, Creation's Lord!

The seed that grew—we knew not how—beneath
The ministry of air, and sky, and soil,
But shaped in glowing type Thine endless Love,
Thy benediction on man's year of toil.

Oh, thus within our lives the hope enlarge
Of bounteous store for all the seed we sow!
Give it the increase from Thy day and night,
Alike from summer sun and winter snow!

Thou art Creator—but a Father's care
The golden autumn's fruitfulness supplies;
Man is creator only where his hand
Works by Thy law and on Thy truth relies.

Fair Nature lights Thy shrines within her woods,
Her altar mountain tops with incense blaze,
The sacramental feast is spread to Thee,
Crowner of good and Author of our days!

CATTLE SHOW AND FAIR.

The show was held at Lynn, Sept. 28th and 29th,18 80 The attendance was very large from all parts of the county.

On the second day, His Excellency, John D. Long, with members of his staff, was present and addressed the people at the annual dinner, Benj. P. Ware, President, presiding. Speeches were also made by the Representative for the Sixth District in Congress, Hon. Geo. B. Loring, and other distinguished gentlemen.

The exhibition of Stock, Agricultural Implements, &c., was on Fairchild's field, Boston st., and the Ploughing Match on Essex street, in the easterly part of Lynn. The exhibition of Fruits, Flowers, Vegetables, Domestic Manufactures, &c., which was remarkably large and fine, was at Market Hall, Central avenue.

The entries in the several departments were as follows :—

STOCK, &C.

Fat Cattle	2	Entries.
Bulls	13	"
Milch Cows	10	"
Herd of Milch Cows	1	"
Heifers and Calves	37	"
Working Oxen	11	"
Steers	6	"
Town Team	1	"
Stallions	3	"
Brood Mares	3	"
Family Horses	4	"

Farm and Draft Horses . . .	13 Entries.
Pairs of Draft Horses . . .	9 "
Colts	14 "
Swine	26 "
Poultry	44 "
Ploughing	24 "
Agricultural Implements . .	8 "
Carriages	5 "

IN THE HALL.

Pears	153	Entries,	405 plates.
Apples	108	"	355 "
Peaches, Grapes, &c., .	110	"	184 "
Flowers	104	"	
Vegetables	73	"	
Counterpanes, &c., . .	88	"	
Articles from Leather .	8	"	
Merchandise	34	"	
Fancy Work & Works of Art . .	138	"	
Children's Work . .	10	"	

CHAS. P. PRESTON, *Secretary.*

REPORTS OF COMMITTEES, &c.

FAT CATTLE.

Henry Gardner, Peabody, for pair weighing 4290 lbs., first premium, $12; for pair weighing 3980 lbs., second premium, $10.

STATEMENT OF HENRY GARDNER.

PEABODY, MASS., Oct. 22, 1880.

The six years old oxen (weight 4290 lbs.), I purchased April 15th, 1879; their weight was then 3300 lbs. They had four qts. of *Cob Meal* each, per day, until the first of August last; through August, 4 qts. clear meal; September, 6 qts. per day each. From December to April they had no *good hay*, their feed being hay of poor quality, corn fodder, &c.; the rest of the time the hay was good.

The five years old (weight 3980 lbs.), I bought Dec. 25th, 1879, weight then 3310 lbs. They had no good hay through the winter, but had 4 qts. of *cob meal* each, per day, till Aug. 10th; from that time to the Fair, 4 qts. clear meal, and good hay since April.

ANDREW J. HAYES,
For H. GARDNER.

BULLS.

The Committee on Bulls report—There were many valuable animals exhibited and the committee regret that so few had complied with the rule of the society, requiring "a written

statement of pedigree." Governed by this rule they have made the following award:

John C. Phillips, Beverly, Jersey Bull, first premium, $10.

T. H. & O. Gowen, W. Newbury, Jersey Bull, second premium, $6.00.

D. A. Massey, Danvers, Ayrshire Bull, 7 yrs. old, first premium, $6.00

S. F. Newman, Newbury, Ayrshire Bull under two years, second premium, $4.00.

Geo. B. Loring, G. W. Herrick, Charles Perley, Andrew Mansfield.—*Committee.*

STATEMENT OF JOHN C. PHILLIPS.

Pedigree of Lord Pollen, Herd book No. 4511; dropped Oct. 9th, 1878.

Dam imported Buttercup 2d. (No. 5632.)

Sire Champion, No. 1109; Champion out of Jennie Porter, No. 470; she by imported Cœur de Lion, No. 318; out of imported Jennie May, No. 473, by Monarch of Roxbury, No. 499; he by imported John Le Bas, No. 398; out of imported Nellie, No. 289.

STATEMENT OF D. A. MASSEY.

I desire to enter three of my Pure Bred Ayrshires, viz., 1 Bull, 1 yearling heifer, 1 calf, for the consideration of the judges in their respective classes in the Society's show at Lynn, Sept. 28–29. These three animals are all recorded in the "Ayrshire Record," and they all trace back directly to importation.

First, "Brown Mars," 2944 A. R.; calved March 1, 1880, (Bull).

Sire Robert Mars, 1155; Mars 1–803, imported. Annie Laurie, 439; Wilson, 323, imported. Ayrshire Lass, 439, imported. Dam, Brown Lady, 5306, imported.

MILCH COWS.

The Committee on Milch Cows submit the following Report:

There were thirteen cows entered for the different premiums offered, and the committee recommend the following award:

Special premium of $25.00 for the best Milch Cow of any age or breed, with satisfactory record in quarts or pounds of her daily yield of milk for one or more years, to Alfred M. Trask, of Danvers.

For the best Milch Cow—Foreign, Native or Grade.

1st Premium, $12, to J. W. Blodgett of Saugus, for his cow "Parepa Rosa."

2d Premium, $9, to Alfred M. Trask of Danvers.

THOROUGH BRED AYRSHIRES.

1st Premium, $12, to J. W. Blodgett, Saugus, for his cow "Moll Pitcher."

2d Premium, $6, to J. W. Blodgett, Saugus, for his cow "Mary Burke."

JERSEYS.

1st Premium, $12, to George K. Pervear, of Lynn.

2d Premium, $6, to Marshall H. Abbott, of Lynn.

NATIVE OR GRADE.

1st Premium, $12, to Otis Nichols of Lynn, for his Grade, Ayrshire, Jersey and Dutch.

2d Premium, $6, to James Cushing of Lynn, for his native cow "Maggie."

Three of the entries were not accompanied by a written statement of any kind as the rules require, and for that reason the owners of the stock were not entitled to receive a premium. The Committee thought that so large a number of extra cows is seldom seen at our annual fairs. The cow of Mr. Peabody, entered for the special premium, deserves particular mention, as well as the very full statement which he submitted. But

the very remarkable yield of the cow of Mr. Trask, left no doubt in the minds of the Committee as to which was entitled to the premium. There is no doubt that any farmer, able to get those thirteen cows exhibited at Lynn, could make money producing milk for market.

Probably the Cows in Essex County do not average more than six quarts per day for the whole year; and if they barely pay the cost of keeping, there must be a good profit from cows that produce eight or ten quarts per day, or more, as do those thirteen cows. The question "how the farmer can make the production of milk profitable," is one that has been discussed a great deal in this region, and one that seems to be as far from settlement as ever. Farmers sometimes forget that the great law of supply and demand will always regulate the price. Attempts have been made in different localities to regulate the price by agreement among the producers, but they succeed only so far as they are made in accordance with this law. The means of increasing the quantity produced are so easy, that whenever the production of milk becomes very profitable, the business is overdone, and prices fall. We do not mean to say that milk associations are of no value, but that it is impracticable to fully regulate the price by combination. An association of milk producers is valuable in many ways, and if the price is too low, undoubtedly such a combination may have an influence in raising it, but cannot entirely control it. The price must always be regulated by supply and demand and cost of production. Probably the great body of milk raisers in Essex County, have seldom found the business very profitable. They have in this way converted their poor and unsalable fodder and their pasturing into money, and "have got a new dollar for an old one" expended in labor and extra feed, and have kept up the fertility of their farms, but have not made much money.

It is difficult to see how there can be much improvement among the farmers generally in this particular, but individual farmers of enterprise and skill may do better. The man who

is lucky enough, or skilful enough, to select such a stock as the thirteen on exhibition at Lynn, will increase his profits by just as much as his cows produce more than the average. We think too that it is more profitable to feed *well*, as highly as can be done without injury to the cows.

We suppose that one principal purpose for which the cow was created was to convert produce into milk, and the quality and quantity will depend on the amount and quality of the raw material furnished, and the capacity of the milk producing machinery of the cow. The relative value of the different kinds of food for the production of milk is a matter about which farmers differ, but it is one of great importance. If grain is used, it is admitted that cows fed with chopped feed will give more milk than if a like quantity is fed dry.

Much, too, has been said recently about the system of ensilage, and its advocates claim that the introduction of this mode of keeping fodder will effect a revolution in the production of milk. Probably too little is yet known about it to enable us to judge whether or not the system is one worthy of universal adoption. It is hard to see how an acre of green, fodder, that will not keep twenty cows a month, if fed green can by this method be made to keep them twice as long, and we certainly cannot expect all that its advocates claim for it. At the same time it is very likely that the system may be of value, and that stock can be cheaply kept by preserving fodder in that way. We hope some of our large farmers will try the experiment thoroughly and make known results.

After all, the production of milk, like almost every other department of agriculture, is a business in which, at best, the margin of profit is small. But by the skilful and judicious selection of cows, good judgment in feeding, and proper care of stock, the farmer may perhaps make this branch of his business pay him as good a profit as any other.

Jos. S. Howe, Sherman Nelson, Geo. M. Wonson, A. M. Bodwell, John C. Ropes.—*Committee.*

STATEMENT OF ALFRED M. TRASK.

To the Committee on Milch Cows :—

I enter for your consideration a native dark red cow, 8 years old, for the special premium of $25, for her daily yield of milk for one year. She calved May 15, 1879, and dropped her next calf May 22, 1880, and is due to calve again, May 15, 1881.

From the time she calved to June 12, 1879, she was fed no grain, but a good pasture, and from June 12 to Aug. 15, 1879, she was fed one quart of meal and one quart of shorts twice a day, scalded and covered up, and fed cold after standing 12 hours. From Aug. 15th, 1879, she was turned into fall feed and fed no more grain till taken to the barn; then she was fed all the English hay and rowen she would eat with one quart of meal and one quart of shorts prepared as before. She was watered twice a day, and if the weather was very cold, I put in hot water enough to take the chill off. Her yield was:

From May 19 to May 31,	250½	qts.,	an average of	$19\frac{3}{13}$	qts. a day.				
" June 1 to June 30,	646	"	"	"	"	$21\frac{1}{5}$	"	"	
July,	$630\frac{1}{2}$	"	"	"	"	$20\frac{10}{31}$	"	"	
Aug.,	590	"	"	"	"	$19\frac{1}{31}$	"	"	
Sept.,	521	"	"	"	"	$17\frac{11}{30}$	"	"	
Oct.,	483	"	"	"	"	$15\frac{18}{31}$	"	"	
Nov.,	437	"	"	"	"	$14\frac{17}{30}$	"	"	
Dec.,	440	"	"	"	"	$14\frac{6}{31}$	"	"	
Jan.,	$440\frac{1}{2}$	"	"	"	"	$14\frac{6}{31}$	"	"	
Feb.,	365	"	"	"	"	$12\frac{27}{29}$	"	"	
March,	279	"	"	"	"	9	"	"	
April,	200	"	"	"	"	$6\frac{2}{3}$	"	"	

5368 qts., an average of $14\frac{358}{365}$ qts. a day for 365 days,

Almost 15 qts. a day for one year. She was fed no grain from the first of March, and fed on the poorest hay I had and the orts taken from the other cow, as I wanted to dry her; she kept on giving milk but lost her flesh, and in March I milked her but once a day and watered her once a day. 10.20 qts. of milk makes 14 ounces of butter. She is now giving

17.20 a day. I bought this cow from Mr. J. Holden of Swampscott, Mass.

J. W. BLODGETT'S STATEMENT.

To the Committee on Milch Cows:

GENTLEMEN.—I enter for premium two Ayrshire Cows, registered in Ayrshire Record, also one Grade Ayrshire. Mary Burke, No. 2834, A. R. Dropped calf Dec. 21, 1879. Due to calve Dec. 21, 1880. From Feb. 1, 1880, to Sept. 26, 1880, inclusive, she gave 7613 lbs. 2 oz. of milk, an average of about 32 lbs. per day.

Moll Pitcher, No. 3695, A. R. Dropped calf Feb. 1, 1880. Due to calve May 28, 1881. From Feb. 19th, 1880 to Sept. 26, 1880, inclusive, she gave 7059 lbs. 4 oz. of milk, an average of about 32 lbs. per day.

Grade Ayrshire, Parepa Rosa. No. 3049, A. H. B. Dropped calf, Feb. 28, 1880. Due to calve, Mar. 24, 1881. She gave from March 13, 1880 to Sept. 26, 1880, inclusive, 7019 lbs. 12 oz. of milk, an average of about 35½ lbs. per day.

I also enter one two year old Ayrshire Heifer, registered in Ayrshire Record. Nutmeg, No. 3872, A. R. Dropped calf, July 18, 1880. I have kept no record of her milk as I did not think of putting her on exhibition.

The treatment and feed of these cows has been of the same kind as the balance of my stock. They were fed during the stabling season with about two-thirds salt and one-third English hay, and eight quarts per day each, equal parts of corn meal and oil meal. From the last of May to date they have been in poor pastures, and have had what hay they could take. Also four quarts per day each of the same kind of grain, for the first two months, and eight quarts per day the last two months.

STATEMENT OF ALFRED M. TRASK.

To the Committee on Milch Cows:—

I enter for your consideration a brown cow, one-half Dutch

and one-half Ayrshire, nine years old. She dropped her calf Sept. 6, 1879, and is due to calve again Oct. 8, 1880. I fed her the same as the red cow, only the first of November I gave her 2 qts. of meal and 2 qts. of shorts, scalded, twice a day and fed cold, with all the English hay she would eat; watered her twice a day, if very cold adding hot water enough to take the chill off.

Her yield for the month of November was 705 qts. of milk, an average of 23 1-4 qts. a day; 10 qts. of her milk make 18 ounces of butter. She has now been dry for two months, as I wanted to give her a rest.

For the first 10 days in November she gave 235½ quarts, an average of 23½ qts. a day; for the last ten days in November she gave 236½ qts. a day, an average of 23 2-5 qts. a day.

STATEMENT OF GEORGE K. PERVEAR.

To the Committee on Milch Cows:—

GENTLEMEN,—I place on exhibition a part of my Jersey stock, say one Milch cow, "Mayflower," calved May 1, 1872; Dam Pansy, 3d, No. 718; Sire Sherman, R. S. Rogers' bull; American Jersey Herd Book, Vol. III. Also, one yearling heifer, calved April 1st, 1879. Dam, Mayflower, Sire, Champion, No 1109, American Club Register. Also, one calf, calved April 4th, 1880. The Dam and Sire same as the yearling, "Champion," owned by Mr. Henry Saltonstall of West Peabody.

I desire to call your attention to the size of these animals for Jersey Stock. The cow gives a large quantity of milk of the best quality while the feed is good; through June and July she gave about 20 qts. per day, which would make 12 lbs. of butter per week.

STATEMENT OF OTIS NICHOLS.

To the Committee on Milch Cows:—

SIRS:—I enter for premium cow Daisy, black and white, Ayrshire, Jersey and Dutch blood, seven years old. Dropped her last calf Oct. 2, 1879; will calve again Oct. 8, 1880.

From Nov. 2 to Nov. 11, 1879, she gave 174½ quarts of very rich milk. We did not measure her milk again until June 6, 1880, but should judge she did not vary from that amount through the winter.

Then ten days succeeding June 6, 1880, she gave 167 qts. It has always been difficult to dry her; could milk her up to the time of calving if I chose. Her feed last winter was English and Salt hay, with two quarts of Indian meal and four quarts of fine feed daily.

Through the summer she ran in a poor pasture with the same amount of grain as in winter.

STATEMENT OF JAMES CUSHING.

The cow named Maggie was dropped the first of April, 1875. She has had three heifer calves. At her first milking she gave 14 qts. of milk per day, and at the milking after her last calf she gave between 18 and 20 qts. of milk per day.

The heifer named Julia was dropped in July, 1876. She has had two heifer calves and has given over 16 qts. of milk per day.

The heifer 2½ years old, named Nell, was dropped in the year 1877. She has had one calf, in May, and gave 14 qts. of milk per day at the first milking.

Maggie, Julia and Nell are sisters. Their dam was one of the best cows in the city of Lynn.

STATEMENT OF CHARLES J. PEABODY.

To the Committee on Milch Cows:

GENTLEMEN:—I enter for the special premium offered for the best Milch cow of any age or breed, with the record of milk for one or more years, my cow "Star." She is ten years old, is grade Jersey, and has given from Sept. 25, 1879, to Sept. 25, 1880, three thousand four hundred and eighty-four qts. of milk (3,484).

She last calved July 18, 1879; she gave from that date, or rather from July 21, when I began to measure it, to Sept. 25,

when the record of the year begins, eight hundred and sixty quarts.

This cow I have owned several years and always regarded her as one of the best in my herd, but have kept no record of her yield until the past year. Seeing in Mr. French's remarks, as published in the last annual report of our Society, that two thousand quarts is named as a fair yearly amount, I felt interested to report the account of my cows, and find the record of this one as follows:

Sept. 25 to Oct. 25,	12	qts.	per	day,	360	qts.
Oct. 25 to Nov. 25,	11	"	"	"	341	"
Nov. 25 to Dec. 25,	11	"	"	"	330	"
Dec. 25 to Jan. 25,	10	"	"	"	310	"
Jan. 25 to Feb. 25,	10	"	"	"	310	"
Feb. 25 to March 25,	10	"	"	"	300	"
Mch. 25 to Apr. 25,	9	"	"	"	279	"
Apr. 25 to May 25,	9	"	"	"	270	"
May 25 to June 25,	9	"	"	"	279	"
June 25 to July 25,	8	"	"	"	240	"
July 25 to Aug. 25,	8	"	"	"	248	"
Aug. 25 to Sept. 25,	7	"	"	"	217	"
Total amount for the year,					3,484	qts.

Her keeping has been what the committee on herds of Milch Cows at the show last year called poor, but it is as good or better than the average in my section of the county; being in summer, good pasture, with corn fodder when the feed is dry, and in winter a mixture of salt, meadow and English hay with some corn-stalks, and five quarts of cob meal per day; she has also had three quarts of meal per day since the 15th of July last. The milk is measured daily, and the above is a correct account of the amount of *strained* milk.

P. S. I have omitted to mention the manner of feeding. The winter feed is given at five meals,—hay first, at 6 A. M.; 1 bush. cut corn-stalks, wet, and 2 qts. of meal added, at 8

A. M.; water at 9; hay at M.; water at 4 P. M.; cut salt hay with 3 qts. of meal at 5; meadow hay at 6.30 closes the day.

HERD OF MILCH COWS.

The Committee on Herd of Milch Cows failed to put in an appearance, and after waiting until late in the afternoon I substituted a committee and proceeded to business.

I think when members of a committee are present at the meeting, and answer to their names, they should either serve on that committee or see that their places are filled by others, then there would be no delay and would not be so likely to cause dissatisfaction.

There were two entries made, but as one of them consisted of three cows, two heifers and a bull, we did not look upon it as a herd of Milch Cows. The other herd, entered by Chas. J. Peabody of Topsfield, consisted of six cows, with a statement of quantity of milk, manner of feeding, &c.

His average in milk is not large, neither has he fed very high; but as his herd was the only one there, and he had complied faithfully with the requirements of the rules of the Society, your committee feel it their duty to award to him the first premium of $18.

Horace C. Ware, J. D. W. French, John G. Page—*Committee.*

STATEMENT OF CHARLES J. PEABODY.

To the Committee on Herd of Milch Cows:

GENTLEMEN:—I enter my herd of cows, six in number, with record of their production of milk for one year. As my business requires a uniform amount the year round, my yield for *six months* is not as large as though my cows all came in, in the Spring as is usual in many places. The time of calving of my cows is so arranged that half of them are new-milch at once, consequently a report of six months would not give a just presentation of the value of the herd.

The record is from Sept. 25, 1879, to Sept. 25, 1880. The herd the most of the year contained seven cows, so the total yield is that of the six exhibited for the year, and one in addition from the time of beginning till July 25, the whole amount of milk being fourteen thousand three hundred quarts. The details of the account are given below :

No. 1. Grade Jersey, 10 years old ; last calved, July 18, 1879. I have been trying with her the experiment of milking a longer time than usual, without allowing her to become with calf ; in this case with good success as her yield for the year is 3484 qts.

No. 2. Grade Ayrshire, 5 years old ; calved last, April 3, 1880 ; will next calve April 4, 1881 ; amount of her milk for the year, (was in milk 10 months), 2301 qts.

No. 3. Grade Jersey, 11 years old ; last calved, June, 1879 ; will calve Nov. 12. Number of qts., 2600, (has been dry 30 days.)

No. 4. Grade Ayrshire, 5 years old; last calved, June, 1880, will next calve May, 1881; (not dry for the year.) Number of quarts, 1753.

No. 5. Grade Jersey, 4 years old ; last calved the second day of the present month ; this was her second calf, so that her record of the past year is that of a heifer ; she dropped her *first* calf in March, 1879, the best part of her flow of milk being over before the trial began ; (dry three months), yield 1364 qts.

No. 6. Grade Jersey, 4 years old ; last calved, May, 1879 ; was due to calve again in May last, but in consequence of an injury lost her calf in February, and was much lessened in value thereby ; she will be due to calve Feb. 16, 1881. Number of quarts, 1575.

No. 7. Was a native cow, 12 years old, milked and fatted, and gave from the time of commencement to July 25, when she was dry, fourteen hundred and twenty-three quarts, (1423).

Feed is pasture and corn-fodder in the summer ; salt, meadow and English hay in winter, with one feed of cut corn-stalks

to each cow per day, and from 4 to 6 qts of cob-meal. Estimate weight of hay fed to each cow per day, from twenty to twenty-five lbs.

THOROUGH-BRED HEIFERS—FIRST CLASS.

AYRSHIRES.

One year old and upwards, never calved, 1st premium, Sidney F. Newman, of Newbury. 2d, D. A. Massey, of Danvers.

Ayrshire Calf, 2d premium, D. A. Massey, of Danvers.

Ayrshires in milk, 1st premium, to J. W. Blodgett, of Saugus.

JERSEYS.

Jerseys in milk, 1st premium to John C. Phillips, of Beverly, "Lady Spiræa." 2d premium, to John C. Phillips, of Beverly, "Lady Eliza."

One year old and upward, never calved; 1st premium to John C. Phillips, of Beverly; 2d premium to John Green, of Lynn.

Calves, 1st premium to John C. Phillips, of Beverly; 2d premium to R. S. Fay, of Lynn.

H. F. Longfellow, Z. C. Wardwell, John G. Page, Nathaniel Little, Jr.—*Committee.*

STATEMENT OF J. W. BLODGETT.

Pedigree.—Name, Nutmeg, No. 3872, A. R.; color, white and red. Dropped Nov. 17, 1877. Bred by J. W. Blodgett, East Saugus, Mass. Sire, Saugus, 1445, A. R. Dam, Elsie, 1124, A. R. Dropped calf, July 18, 1880; not served.

She has run in pasture with the rest of the herd; had what hay she would take, and 4 qts. per day of mixture of corn meal and oil meal. The last week before the fair she averaged nine quarts of milk per day.

STATEMENT OF JOHN C. PHILLIPS.

1st prize, Lady Spiræa, Herd Book, No. 6939. Dropped March 30, 1877.

Sire, Nonquit, No. 139; he was sired by Motley, No. 515, out of Primula, No. 1238; Primula out of Primrose, No. 281, imported; by Cœur de Lion, imported.

Motley out of Meg Meriles, No. 1372, imported; by Jack Horner, No. 514, imported.

Dam, Spiræa, No. 3915. She was sired by Rajah, No. 340, imported; out of Fleur de Lis, No. 614, imported and purchased from her breeder, Mr. G. Helier, Island Jersey.

2d Prize. Lady Eliza, Herd Book, No. 6941. Dropped April 15, 1877.

Sire, Nonquit, No. 1391. See above.

Dam, Eliza, No. 619, imported; bred by Philip Neal, Island of Jersey.

The calves of the above cows were exhibited, and received a separate prize.

First prize for heifer without calf,—Clethea, Herd Book, No. 8427. Dropped June 27th, 1878.

Dam, Clytie, No. 618, imported; bred by Philip Neal, Island of Jersey.

Sire, Rajah of Greenvale, No 2533; out of imported Fleur de Lis, No. 614; by Rajah, No. 340.

Milk Record.

Lady Spirea,	April 24 to 31,	1880,	189	lbs.
"	" May	"	1079½	"
"	" June	"	1001½	"
"	" July	"	926	"
"	" August	"	830	"
"	" September	"	658	"
Lady Eliza,	Sept., 8½ days,	"	248	"

HEIFERS—SECOND CLASS.

The Committee on Native or Grade Heifers submit the following report:

Under 4 years, Milch. To Alfred M. Trask, Danvers, 1st premium, $12.00.

To Jacob L. Farnham, of No. Andover, 2d premium, $6.00.

One year old and upwards, that have never calved. To J. K. Bancroft, of Lynnfield, first premium, $6.00.

S. F. Newman, of Newbury, 2d premium, $4.00.

Heifer calves under one year old. To Thomas P. Richardson, Lynn, 1st premium, $5.00.

To W. H. Jones, 2d premium, $3.00.

H. G. Herrick, *Chairman.*
For the Committee.

WORKING OXEN AND STEERS.

The Committee on Working Oxen and Steers make the following report:

There were five entries of oxen to contest for the premium, which we award as follows:

First premium, $12, to O. Loring Carlton, Middleton.

Second premium, $10, to R. T. Jaques, Newbury.

Third premium, $8, to B. H. Farnham, No. Andover.

There were only two entries of four year old Steers, and we award as follows:

First premium, $10, to J. L. Farnham, No. Andover.

Second premium, $6, R. T. Jaques, Newbury.

While all the cattle that competed for the premium worked well, we desire especially to commend the four-year-old steers of J. L. Farnham of No. Andover. Seldom, indeed, do we find such a pair, so nicely matched, so well proportioned, and so thoroughly trained. Their exhibition was an honor to the Essex Co. Fair, as well as to their owner.

Dr. Geo. B. Loring entered two yoke of excellent looking

oxen ; their working qualities your committee were unable to test, their driver not appearing. Your Committee would make honorable mention of them.

Respectfully submitted,

Richard S. Bray, Daniel G. Todd, Moses H. Poor—*Committee.*

TOWN TEAMS.

The Committee on Town Teams, having attended to their duty, would report that they have awarded to the City of Lynn, for the best team of horses, the first premium of thirty dollars, ($30.00). Respectfully submitted,

H. N. Breed, T. T. Paine, N. S. Harris—*Committee.*

STEERS.

The Committee award to Byron K. Farnham, of North Andover, for three year old steers, first premium, $8.00.

To Benjamin and Ralph Farnham, of No. Andover, for two year old Steers, first premium, $6.00.

To Byron K. Farnham, of No. Andover, for pair yearling steers, first premium, $5.00.

To Sidney F. Newman, of Newbury, for his yearling steers, second premium, $4.00.

Joshua N. Kent, S. Longfellow, Caleb Childs, R. Jaques, F. R. Allen—*Committee.*

STALLIONS.

To H. M. George, Saugus, for Stallion 5 years old, first premium, $15.00.

To H. M. George, Saugus, for Stallion 3 years old, first premium, $10.00.

To A. C. Hill, Saugus, for Stallion 3 years old, second premium, $6.00.

J. D. Drew, M. H. Pratt, M. A. Plummer—*Committee.*

BROOD MARES.

The Committee find four mares entered for premium, only one of which, in their judgment, is entitled to a premium. They award to H. L. Chase, of Lynn, first premium, $15.00.

W. P. Bailey, M. B. Merrill, Wm. E. Kimball—*Committee.*

FAMILY HORSES.

The Committee did not consider any one of the horses exhibited worthy of the first premium.

They award to T. W. Tyler, Lynn, 2d premium, $10.00. Goodwin Bros., Lawrence, 3d premium, $8.00.

Warren Ordway, M. W. Moody, Aaron Knowlton, M. C. Andrews—*Committee.*

FARM AND DRAFT HORSES—SINGLE.

Jonas Rollins, Danvers, 1st premium, $15.00.

J. W. Blodgett, Saugus, 2d premium, $12.00.

Samuel Dane, Hamilton, 3d premium, $10.00.

Joshua Roberts, Gloucester, 4th premium, $6.00.

Paul T. Winkley, Hugh Hill, Herbert A. Knowlton—*Committee.*

PAIRS OF DRAFT HORSES.

Oliver Stevens, North Andover, 1st premium, $15.00.

Edward P. Perley, Danvers, 2d premium, $10.00.

J. J. H. Gregory, Marblehead, 3d premium, $5.00.

Henry C. Harnden, Edward Kent, Alden C. Estes, John G. Walcott—*Committee.*

COLTS—FIRST CLASS.

George B. Loring, Salem, for 4 year old colt, 1st premium, $12; E. L. Hill, Lynn, do do, 2d premium, $8.00; A. C. Hill, Saugus, do do, 3d premium, $5.00.

Goodwin Bros, Lawrence, for 3 year old colt, 1st premium, $10.00; John Gibney, Salem, do do, 2d premium, $5.00.

William E. Kimball, Otis Mann, T. W. Bartlett—*Committee.*

COLTS—SECOND CLASS.

Daniel G. Todd, Rowley, Colt two years old, 1st premium, $8.00.

C. O. Beede, Lynn, Colt one year old, 1st premium, $6.00; C. W. Bailey, Lynn, do do, 2d premium, $4.00.

John C. Ropes, S. F. Newman, J. G. Page—*Committee.*

SWINE—FIRST CLASS.

The Committee on Swine, on repairing to the pens where they were exhibited, found the number much larger than usual and of better quality. The breeds most prominent were the Poland China and Chester White, with grades of most of the best breeds for general use. We would recommend that the Society make some general rule in regard to classifying the different breeds of swine. We found this year that Poland China were put in both classes, as large and small bone, and think it would be a good plan to appoint a Special Committee

to classify the different breeds, so that in future the Committee may have some standard to go by. In making up our report, we have recommended giving the premium to those that seemed best for general use rather than for their size or weight. Therefore we award as follows:

To M. Birmingham, Salem, for Boar (Grade), 1st premium, $10.00; A. T. Newhall, Lynn, do do, 2d premium, $6.00.

State Hospital, S. S. Pratt, farmer, Danvers, Breeding Sow, 1st premium, $10.00; Elizabeth Saunders, Peabody, Breeding Sow, 2d premium, $6.00.

Albert Berry, North Andover, Weaned Pigs, 1st premium, $10.00; Samuel Dane, Hamilton, do do, 2d premium, $6.00.

G. C. Foster, E. K. Lee—*Committee.*

SWINE—SECOND CLASS (small bone).

The Committee award the following premiums:

Best Boar—First premium, $10, to R. G. Buxton, Peabody, for Yorkshire Boar; Second premium, $6, to Alfred M. Trask, Danvers, for small Yorkshire Boar.

Best Sow—First premium, $10, to Albert Berry, North Andover, for Sow, white breed; second premium, $6, to B. P. Ware, Marblehead, for Poland China Sow.

Best litter of Weaned Pigs—First premium, $10, to B. P. Ware, Marblehead, for Poland China Pigs; second premium, $6, to Asylum for Insane, Danvers, for Mackey and Chester Pigs.

The regulation, dividing Swine into two classes, is undoubtedly a good one, but it is too indefinite No breeds are mentioned. The only information to guide one in entering stock is the item, small bone, in second class.

This indefiniteness leads to confusion in entries. Animals of the same breed may be entered in both classes. This year Poland Chinas were entered in both classes, but were finally all transferred to the second class, as a majority of the breed

were on that book of entry. The Poland China is not a small bone breed, and yet it was entered as such. The Committee did not feel at liberty to throw them out, not knowing on whom the responsibility of the mistake in entry rested.

The Committee suggest that hereafter the printed list of premiums shall state the names of the breeds in each class, with the limitation of weight. Thus,—

First Class—Large breeds, such as Cheshire, Berkshire, Chester County Whites, Poland China, Large Yorkshire, and any other breed or grade weighing more than 300 pounds at maturity.

Second Class—Small breeds, such as Suffolk, Essex, Small Yorkshire, China, and any other breed or grade weighing less than 300 pounds at maturity.

The classification seems to include most, if not all, the breeds known in Essex county, and with the limitation of weight, no pig need be excluded from entry on account of breeding.

Although in England there are many well known breeds, some of which have been imported into this country, yet the Royal Agricultural Society acknowledge only the Berkshire breed by name, and classifies the others as Large White Breed, Small White Breed, Small Black Breed, &c.

This classification, from long established custom and familiarity with the various breeds, may answer the purpose there without causing any confusion, but it is too indefinite for our locality and would scarcely be of more use than our present system. The N. Y. State, the Pa. State Agricultural Societies and many other Societies, offer premiums for the different breeds mentioned, by name, but the number of entiries of pure bred swine at our Fairs is not sufficient to warrant the expense at present, however it may be in the future.

The necessity of improvement in breeding swine in our County may not be apparent to the frequenter of our Fairs, because the best animals are brought to them. But let the same person start out and examine the average hogs in his

locality, and he will be likely to form a different opinion. I remember that several years ago, I travelled over quite an extent of country, and looked at many lots of pigs before I found a pair that came up to my standard, which I did not consider an extreme one. How many coarse, long snouted, slab sided runts were seen, I will not pretend to state.

If we want a pig for bacon, we need a different sort of a pig than for pork.

The large breeds, such as the Berkshire, are best for bacon, the smaller breeds for pork. If you want pigs with good constitutions, which will come to early maturity and weigh 200 lbs. or thereabouts at a year old, take an Essex, or Small Yorkshire boar and cross him on some of the large coarse sows, with which the county abounds. Such pigs will be good feeders, easily kept, and will give the best average results for pork and bacon.

Here comes in the importance of the sire. If real improvement is expected, a pure bred boar should be used as much as a pure bred bull on a herd of cows, whether the calves are wanted for the dairy or the butcher.

Harris says: "The question of Large vs. Small Breeds, therefore, can only be answered by taking these objects into consideration. We need both breeds. The large breed to give us sows and the small breed to give us boars. It is a mistake to refine and reduce the size of the large breed and then to breed from these "improved" pigs of the large breed. To produce pigs merely for the butcher, we should resort to crosses with a large, vigorous, unpampered sow, put to the finest, thorough-bred boar of the small breeds that can be obtained.

The larger the sow and the smaller the boar, the more will the little pigs be able to eat in proportion to their size, and the greater will be their growth in proportion to the food consumed.

Form—As the bullock which approaches nearest to the form of a parallelopiped, is considered the greatest perfection of a beef animal so the pig, whose shape suggests a parallelogram, will be the most desirable porker for the butcher.

A broad, straight back necessarily gives well arched ribs and consequently plenty of room for the lungs, stomach and intestines. The value of the pig for feeding purposes depends largely on the capacity of these organs.

Let a rectangular wooden frame be applied to the body of the pig and it will be seen at once how near the animal approaches the desired standard. If this test is tried on many pigs it will be found that sloping rumps are the rule and not the exception. The importance of proper form in the pig is not sufficiently appreciated, or we should see greater improvement in this respect.

Hoping some of my hints may be of use to the society, as well as to breeders of swine, I remain yours truly,

JOHN D. W. FRENCH, *Chairman.*

John S. Cressey, T. J. Ordway—*Committee.*

North Andover, 26th October, 1880.

POULTRY—FIRST CLASS.

L. B. Fowls, W. M. Ward, Peabody, 1st premium, $3; do, Chicks, C. L. Becket, do, 1st, $2; do do, W. M. Ward, do, 2d, $1; do do, M. N. Branscomb, Lynn, gratuity $1; D. B. Fowls, J. Fitz, 4th, Lynn, 2d premium, $1.50; Langshan, P. F. Adams, Salem, gratuity, $1; W. C. Fowl, C. W. Wyman, Lynn, 2d premium, $1.50; Geese, A. B. Clark, Peabody, 1st, $2; do do, 2d, $1; Ducks, E. S. Bean, Swampscott, 1st, $2; do, A. B. Clark, Peabody, 2d, 1; do, Wm. B. Newhall, Lynn, gratuity, $1; statement showing profit, Wm. Dean, 1st premium, $5; do do, Frank M. Allen, Lynn, 2d, $2; best collection, W. M. Ward, Peabody, diploma.

Two years ago, your Committee on Poultry recommended that special premiums be offered for Coops of Fowl of different varieties, of 1st and 2d classes; Poultry that should show the most profit for one year, together with a statement, showing the manner of keeping, cost of feed, &c.; also that the stand.

ard of judging be the American standard of excellence, all of which the Society were pleased to adopt.

We think that the results desired have been obtained, to wit.: Wm. Dean, of Peabody, was awarded the first premium for Fowls for profit, in the first class. His statement is as follows :

Sept. 1st, 1879, 12 Light Brahma Hens, were taken to keep for profit; Sept. 1st, 1880, the account was closed; during this time they produced 1,916 eggs, which were sold for $41.61, or more than two cents apiece. To produce these eggs, there was consumed corn, wheat screenings and meat, to the amount of $12.85, the eggs costing less than three-fourths of one cent apiece.

By this statement, it appears that each hen produced $2.40 worth of eggs in one year, and at the end of the year was worth as much as when the experiment commenced.

Frank M. Allen, of Wyoma, Lynn, winner of 2d premium for profit, submitted the following statement:—22 Light Brahma Hens for six months produced 169¼ dozen eggs, which were sold for $38.15, costing the consumer nearly 1 7-8 cents per egg. To produce these eggs, corn, meal, oats, feed, wheat and cracked corn were consumed to the amount of $16.95, or a little more than three-fourths of one cent per egg produced, his rate of cost being a little more than Dean's, and his selling price almost one-fourth of one cent less. No account is taken of grass and waste from the house in either statement, which is supposed to have been fed to them.

Now, by these experiments, it seems to be demonstrated: 1st, That it costs about three-fourths of a cent to raise an egg in Essex county. 2d, That in these cases they were sold for an average of two cents apiece, a clear profit of 1¼ cents apiece was made. (What other product exhibited at this fair can show a profit of more than 100 per cent?) 3d, That the Light Brahma Fowl, of all others of the Asiatic varieties, are best adapted to the confined quarters of cities or large towns. 4th, That colonies of 12 do better than larger numbers, for as

you increase the number over that, the rates of cost increase until at 40 or more the profit entirely ceases. 5th, That the old fashioned method of feeding only corn to fowls should be discarded, and a varied feed be substituted.

Now consider, if you please, that if only 12 dozen eggs are consumed per year, by each inhabitant of any given city or town in the county, and multiply this by the number of inhabitants of the county, and you have a total amount of eggs consumed; and also multiply that by the profit that these gentlemen have obtained and you have the grand total which has gone into the pockets of Northern and Eastern farmers principally.

Now if there is an agricultural society that can show a better record than that above shown, so much the better, and so much more will your committee insist that there is no greater agricultural industry, if conducted properly, that will pay 100 per cent. profit per year, and leave the capital invested as good as when they started. These facts and figures were what the committee hoped to bring out when they recommended the report which was adopted two years ago.

We feel called upon to congratulate the society upon the extra good quality of the Light Brahma stock exhibited in the fancy department, any coop of which was a credit to the show. We also feel much regret that facilities were not provided, so that the fowl might have been scored, according to the American standard, and score cards placed upon the premium coops; the cost of these cards, also copies of the standard for committee use, will not cost but a trifle, also a scale for weighing the fowl.

As there is always a crowd upon the ground in the afternoon, and as it is a considerable work to properly examine the birds, your committee would recommend that the Poultry committee be instructed to commence work as soon as the entry books close; and that different varities be assigned special places upon the benches, keeping each distinct variety by itself, the same as was adopted at the last meeting with

regard to fruit, as it gives a better chance to observe the contrast between the best articles, and saves very much work for the committee.

Gratuities were awarded to two different parties who entered varieties other than those specified by the Committee Book, as they wished to encourage variety, and any new stock that may be worthy of it.

W. H. ALLEN, *for Committee.*

POULTRY—SECOND CLASS.

Your Committee report as follows :—

Willard L. Fisk, Saugus, Plymouth Rock Fowls, First premium, $3.00. Hamilton & Christian, Lynn, 2d premium, $1.50.

E. W. Edmunds, Saugus, Plymouth Rock Chicks, 1st premium, $2.00. J. A. Fisk, Saugus, 2d premium, $1.

Robert Winn, White Leghorn Fowls, 1st premium, $2.00; Chicks, 1st premium, $2.00.

Mrs. W. H. Holt, Black Leghorn Fowls, 1st premium, $3.00. Hamilton & Christian, Lynn, 2d premium, $1.50.

F. B. Todd, Rowley, Black Leghorn Chicks, 1st premium, $2.00. N. Pierce, Gloucester, 2d premium, $1.00.

Benj. Rhoades, Saugus, Black Spanish Chicks, 1st premium, $2.00.

J. B. Wood, Lynn, Polish Chicks, 2d premium, $1.00.

W. M. Ward, Peabody, Bantam Fowls, 1st premium, $2.00; Chicks, 1st premium, $2.00.

A. B. Williams, Lynn, Bantam Chicks, 2d premium, $1.00.

G. W. Harris, Lynn, Bantam Fowls, with statement, $5; 2d premium, $1.00.

B. H. Dixey, Lynn, Bantams, Gratuity, $1.00.

D. Bradstreet, F. S. Lovett, N. Dole—*Committee.*

PLOUGHING—DOUBLE TEAMS.

Jaques & Bray, Newbury, 1st premium, $12.

Jacob L. Farnham, North Andover, 2d premium, $10.

J. J. H. Gregory, Marblehead, 3d premium, $9.

Hospital for Insane, Danvers, 4th premium, $8.

B. H. Farnham, North Andover, Gratuity, $5.

D. Bradstreet, J. N. Rolfe, A. B. Fellows, N. T. Harris—*Committee.*

PLOUGHING—SINGLE TEAMS.

R. T. Jaques, Newbury, 1st premium, $10.

C. J. Peabody, J. W. Hayward, J. Longfellow—*Committee.*

PLOUGHING WITH TWO HORSES.

Oliver Stevens, North Andover, 1st premium, $12.

C. N. Maguire, West Newbury, 2d premium, $10.

Samuel Dane, Hamilton, 3d premium, $8.

R. S. Bray, Newbury, 4th premium, $6.

Lawrence L. McKay, Hamilton, 5th premium, $4.00.

M. A. Plummer, J. Frank Foster, Horace Ware, Andrew Curtis, Moses H. Poor—*Committee.*

PLOUGHING WITH THREE HORSES.

J. W. Blodgett, Saugus, 1st premium, $10. Plough, "Oliver Chilled," No. 40.

H. W. Foster, Dan'l P. Pope, John G. Page—*Committee.*

PLOUGHING WITH SWIVEL PLOUGHS.

Carlton & Wilkins, Middleton, Ox Team, 1st premium, $12.

Geo. B. Loring, Salem, do do, 2d premium, $10.

Edw. P. Perley, Danvers, Horse Term, 1st premium, $10.

Jonas Rollins, Danvers, do do, 2d premium, $6.

JOSEPH HOW, *Chairman.*

AGRICULTURAL IMPLEMENTS.

The Committee on Agricultural Implements make the following award :—

Whittemore Bros., Boston, best collection, Diploma and $15.

E. S. Flint of Danvers, best Corn and Bean Planter, $3.

C. F. Pollard, Lynn, 2 Grindstones, $3.

Henry Hale & Co., Salem, Kemp's Manure Spreader, $8.

Whittemore Bros., Boston, best Hay and Corn Stalk Cutter, $3.

Hamlin's Rubber Bucket Pump, $3.

Bartholomew's Improved Broadcast Seed Sower, $5.

Best Root Cutter, $2.

Best Corn Sheller, $2.

A. B. Fellows, James T. Johnson, George Buchan, Bennett Griffin, Abel S. Harriman—*Committee.*

CARRIAGES.

The Committee on Carriages have attended to their duty and submit the following report :—

There were five entries of carriages, as follows :—Sawyer & Chase of Lynn ; Wm Chase & Son, Merrimac; Charles E. Stone, Amesbury ; T. W. Lane, Amesbury ; Skinner & Golder,

Lynn, Carriage Wheels. And the Committee awarded the following gratuities :

Sawyer & Chase of Lynn, $15.

Wm. Chase & Son of Merrimac, $10.

Charles E. Stone of Amesbury, Diploma.

T. W. Lane of Amesbury, $10.

Skinner & Golder of Lynn, Diploma.

O. S. Butler, T. K. Leach, Aaron Sawyer, Henry Hobbs—*Committee.*

DAIRY.

The Committee on Dairy make the following awards, viz.:—

First premium on Butter, $10, Farnham Stiles of Middleton ; Second premium, $8, to Z. C. Wardwell, of Groveland ; Third premium, $6, to S. K. Griffin of Groveland ; Fourth premium, $4, to J. K. Bancroft of Lynnfield.

There were no specimens of cheese exhibited, or any statements offered for the greatest produce of milk on any farm in proportion to the number of cows producing it, or of the greatest amount of Butter made from any quantity of milk, the produce of any single cow.

John A. Putnam, Joseph Hale, Thomas A. Sides—*Committee.*

STATEMENT OF FARNHAM STILES.

I present seven pounds of September butter (made from Jersey and Ayrshire cows), as follows : The milk, after standing in pans from 24 to 36 hours, is skimmed ; the cream is stirred at each skimming ; temperature at churning, 62 degrees. The buttermilk is worked out, the butter is then salted, using about one ounce to the pound, and, after standing twenty-four hours, is worked again.

STATEMENT OF Z. C. WARDWELL.

I enter for premium seven pounds of September butter, from

milk of high grade Jersey cow. Milk strained in tin pans and allowed to stand from twenty-four to forty-eight hours; stir the cream at each skimming; never use ice or water about butter or cream; when churned, salted to taste and allowed to stand twenty-four hours before putting into balls for market.

STATEMENT OF MRS. S. K. GRIFFIN.

September butter made from three grade Jersey cows—three-fourths Jersey, one-fourth Dutch. Milk set in shallow pans thirty-six hours; cream churned twice a week; butter worked and salted to the taste from the churn, then allowed to stand twenty-four hours before a second working and making into balls.

STATEMENT OF J. K. BANCROFT.

Made from the milk of one Jersey and one native cow. The milk is set in shallow pans and the cream taken off when the milk has soured, and stirred every day for six days; churned, worked by hand and salted; stands until the next morning and again worked.

BREAD, HONEY, PRESERVES AND PICKLES.

Your Committee had under their consideration in this department 9 entries of 13 loaves of Bread, 2 of Honey, 2 of Canned Fruits, 3 of Jellies, 2 of Ketchup, 2 of Sauces, 1 of Native Wines, 1 of cake, and 1 of Cakes and Pastry,—from 20 contributors, for which your committee made the following awards, viz:

Best Yeast Bread,	Mrs. George T. Estes, Lynn, Gratuity,	$2.00
Next best Yeast Bread,	Dora B. Eaton, " "	1.50
" " "	" Clara L. Edwards, Lynnfield, "	1.50
" " "	" Mrs. Allen Smith, Jr, Rockport, Gratuity,	1.00
" " "	" Mrs. Sam'l B. Bond, Lynn, Gratuity,	1.00

Best Graham Bread, Mrs. J. Gage, Middleton, gratuity, 1.00
Self Raising Bread, Mrs. C. L. Webster, Lynn, " 50
Cake and Pastry display, Wm. Griffin, Lynn, " 2.00
Fruit Cake, Mrs. Geo. T. Estes, Lynn, " 50
Best Honey, Henry Alley, Wenham, " Birds of New England."
Next best Honey, Philip R. Russell, Jr., Lynn, Gratuity, 1.50
Best Canned Fruits, 74 varieties, Mrs. E. W. Ladd, Bradford, Gratuity, 5.00
Best Jellies, 28 varieties, do do, Gratuity, 3.00
Best Pickles, 8 varieties, do do, Gratuity, 2.00
Canned Fruits, 7 varieties, Mrs. M. E. Fuller, Middleton, Gratuity, 1.00
Jellies, 15 varieties, Mrs. J. Henry Hill, Amesbury, Gratuity, 1.00
Jellies, Mrs. Sykes, Lynn, Gratuity, 50
Cucumber Pickles, Mrs. Jeremiah Fuller, Middleton, Gratuity, 1.00
Tomato Ketchup, L. K. Millett, Lynn, Gratuity, 50
" " Mrs. Nellie Lawler, Lynn, Gratuity, 50

Your Committee recommend to the Society that it offer *premiums* of $3, $2 and $1, respectively, for the first, second and third best *loaf* of white Bread made of wheat flour, and raised *by yeast. Also premiums* of $2 and $1, respectively, for the first and second best yeast bread made from " Graham flour." *Also premiums* of $1.50 and $1, respectively, for first and second best yeast bread made from other grains, or with other grains mixed with wheat.

All Bread entered for premiums to be in loaves, weighing not less than one pound each, and to be not less than 24 *hours old.* All Bread entered for premiums must have with it a full written statement, over the signature and address of the bread maker, stating the kind of flour used, quantity of each ingredient, how mixed, and length of time kneaded and raised, which statements on all *premium bread* are to be sent to the Secretary, with the report of the Committee for publication.

We also recommend that premiums of $5 and $3 be offered

for the best and second best display of Bees, Hives and Aparian implements to be accompanied with a description of the bees, hives, &c., with number of hives in use, and amount of surplus honey taken from them that season.

We also recommend the offering of premiums of $3 and $2, respectively, for the first and second best Honey made in the county, of not less than ten pounds weight in the comb, with one pound of same extracted. Statement, signed by the Bee-keeper, of the kind of bees and hive used, and time of year when the honey was made, to be given when entry is made, for publication.

Also that *premiums* of $3 and $2, respectively, for each of the first and second best collections of Pickles, Preserved Fruits and Jellies, made from products of the county. All Pickles, Preserves and Jellies entered for premium must have with it a full written statement over the signature, and address of the maker of them, stating how made; which *statements*, where premiums are awarded, to be given to the Secretary, by the Committee, for publication.

We would also recommend that premiums of $3 and $2, respectively, be offered for the first and second best five pounds of Dried Apples grown and dried within the county. The apples, when entered, to have with them over the signature of the person preparing them a statement of the process used and the amount of labor and time required in preparing and drying them, which statement on *premium fruit* to be given to the Secretary, with report of the Committee, for publication.

In addition to the above, that $5 be placed in the hands of the Committee for *gratuities* on other articles entered in their department, which are deemed by them worthy of award, it being understood that all articles shall be the production of Essex county.

This matter of giving *premiums*, instead of *gratuities*, in all cases where possible, your Committee consider worthy of consideration and adoption by the society, for it is a well known fact that a *premium*, however small, is of more value,

in public opinion, than a *gratuity* of much larger amount. The exhibitor, as a general rule, competes, not for the money he can get, but for the pleasure, if not pride, of having the premium article and one that is not dependent upon the limited generosity of a committee in rewarding its merits with a gratuity. In our opinion, it is better by far, as a means of promoting the best results, to extend the list of premiums and diminish the amount in gratuities.

The first and most important article that came under the consideration of your Committee was Bread, which was found (with exceptional cases of one exhibit, sour, and one slack baked), to be generally excellent. The best loaf was very large, very handsomely and evenly baked, and of excellent quality, there being but little choice between that and the next best in *quality;* the size and evenness of baking of the larger loaf deciding the question. The third best was made by a Miss of 13 years, whose penmanship shows that bread making is not her only accomplishment, and there can be no more valuable accomplishment or better praise for any lady, young or old, than to have it said of her, "what excellent bread she always makes." Others had good bread, and the statements of how they made it, which is given with this report, will be read with interest, and as we do not consider it inappropriate in any Committee, in their report, to give the history of the chief material of which the article upon which they report is composed; and, as bread of no other cereal was exhibited, we leave the other kinds for a subsequent committee to take up, and have taken *Wheat*, the improved varieties of which furnish the material for making the best bread of the present day. It is supposed to have existed in perfect state at the creation of man, and that "Noah preserved its seed from the flood," for we find that "seed time and harvest" is alluded to in the promise to Noah immediately after the "flood," showing that cereals had been cultivated previously.

One hundred years after the death of Noah, Abraham, in his hospitality to strangers, "hastened into the tent unto

Sarah and said, Make ready quickly three measures of fine meal, knead it, and make cakes upon the hearth," (Gen. xviii, 6). This was supposed to be wheat meal, for about half a century after the death of Abraham the "wheat harvest" is mentioned, (Gen. xxx., 14). Joseph dreamt of "the sheaves," probably of wheat, for a little later, the "seven eared" variety is described in Pharaoh's dream, "which kind is still cultivated in Egypt, and has been used by the London bakers for dusting their kneading boards, being raised to some extent in England, where it is called "clog wheat," and still has seven ears on one stalk." Seed from the same variety, found with a mummy 3000 or 4000 years old, is now known as the "mummy or Egyptian wheat." Wheat was used in Solomon's time in exchange or trade, for "*Hiram, king of Tyre*, was paid for services in the building of the Temple with 2000 measures of wheat." In the parable of the Sower, our Lord alludes to the grains of wheat which "in good ground produce an hundred fold." The common *Triticum vulgare* will sometimes produce one hundred grains in a single ear. All through the Scriptures allusion is made to Wheat and Bread, showing conclusively that it has in all ages been the food of mankind.

Among the Romans it was considered of so much importance that learned men wrote essays upon it, one of whom, Columella, says, in an essay written near the commencement of the Christian era, "The most profitable grains for man are common wheat and bearded wheat. We have known several kinds of wheat, but of these we may chiefly sow what is called the red wheat, because it excels both in weight and brightness. The white wheat may be placed in the second rank, of which the best sort of bread is deficient in weight," thus describing the kinds and qualities of the wheat of that day. The same kinds of wheat above mentioned and recommended "are yet grown in Europe and Great Britain, producing a greater average weight than any other."

"When the Romans, in Cæsar's time, landed in Britain, the culture of wheat and other agricultural products was

deemed of such importance that its praises were sung by poets; philosophers wrote essays upon it, and it received the solicitous attention of legislators." In planting their colony on that island, they of course carried with it the husbandry of Rome, but we find that wheat was not consumed by all classes then or for some time later.

"In 1534, in the first English work on Agriculture by Sir Anthony Fitzherbert, the consumption of wheaten bread was said to be almost exclusively by the higher ranks of society, while the laboring classes were fed chiefly on rye, barley and oaten bread," as is the case in the northern countries of Europe at the present time. At that time farmers were restricted in the amount of land planted with wheat, it being considered too exhausting a crop. The same year Henry VIII. caused an "assay of bread" to be made from one quarter of wheat. In 1552, under Queen Mary, export of wheat from Great Britain was not allowed when the price was over 6s. 9½d. per quarter. In 1603, under James I, the price was raised to £1, 6s. 8d. per quarter.

The first introduction of wheat into America was in Mexico by chance; a slave having found a few kernels of a strange grain among some rice, showed it to Cortez, his master, who, knowing it to be wheat, ordered them to be planted, and the result proved how well American soil was adapted for its growth, and to this day one of the finest wheat valleys in the world is said to be near the Mexican Capital.

From Mexico a few grains were carried to Peru by a Spanish lady and planted at Lima, the entire product for several successive crops being used for seed. In Quito, Equador, it was introduced by a Monk of the Order of St. Francis, and the jar which contained the seed is said to be still preserved by the Monks in the greatest veneration. In California, wheat was first introduced and cultivated by the Spanish Jesuits, and this year that State and Oregon has produced 38,000,000 bushels. In eastern North America it was introduced with the English, Dutch and French colonies, when they started their

plantations, and from thence followed emigration West until there was raised in the United States alone of this cereal, 84,823,272 bushels in 1840, of which 73,625,174 bushels were consumed and 11,198,098 bushels exported, or 7½ per cent. of the crop raised, while its production has increased so wonderfully that in 1880, by the reports to Bradstreets, the crop is estimated at 465,691,000 bushels, with amount estimated for home consumption, 281,000,000 bushels, leaving about 184,000,000 bushels surplus for export, or 40 per cent. of the crop raised.

During this period of 40 years, the population of the United States has increased about 300 per cent. and the wheat crop 550 per cent. In 1840, the population consumed about 4.5 bushels per capita, which, in 1880, has increased to 5.5 bushels as the estimated consumption per capita. "The consumption of wheat bread, indicates the advance of a people towards the highest civilization;" because it is a known fact that, wherever wheaten bread as an article of food is used the most, its superior nutritious qualities, tends to make the people more active, vigorous, and enterprising. Every one knows the influence that the physical condition of a human body exercises over its mental and moral powers. Anything, therefore, which has a tendency to improve and strengthen the human frame, must at the same time raise the tone of his mental and moral qualities. When we consider, in this direction, *the increase of nearly* 25 *per cent. in the consumption of wheaten bread per capita, in the past forty years*, we can account for the active, progressive spirit of the American people.

As Wheat in the Bible is called the "*Staff of Bread*," so is Bread called, and *is* the "*Staff of Life;*" and whoever makes *good* bread in any household, is a blessing or "staff" to that family; for with good bread, with or without butter or molasses, the children are satisfied, contented and happy, growing up to be active, vigorous and enterprising men and women; whilst with the heavy, sour, slack baked, as well as slack made wheat bread, or bread yellow hued with saleratus and other prepar-

tions, that is found, we are sorry to say, in many families, all the butter and molasses that can be piled upon it would not make the children happy, except they licked off the sweets and threw away the sour. Such bread would not make them otherwise than peevish and unsettled in disposition;—*even more*—bad bread has as much misery to the human race to answer for, as almost anything else; for wherever in any family bad bread is the sustenance of that family, as a rule, you would find it constitutionally sickly, intemperate, ill-tempered, and perhaps worse, or else the precept "that the physical condition of mankind influences its mental and moral powers" is a false one. It is hard to believe that bad bread, as a rule, in any family, will raise men and women whose physical constitution will be good; therefore, any society, or individual that can in any manner extend the limit of good household bread by encouraging the making of the best kinds and making known its good qualities and how it was made so, in print, or by personal efforts in showing others, is a minister of more good to the human race than any one realizes who has not given it thought.

Do you not think, readers, that bad bread with bad coffee, tends to promote intemperate habits and its attendant evils, while good bread, with or without good coffee, greatly promotes temperate habits with its attendant happiness.

The process of making bread in Bible times was similar to that of the present time with us. "The flour was first mixed with water, or perhaps milk; it was then kneaded with the hands (in Egypt with the feet also), in a small wooden bowl or "kneading trough" until it became dough. When the kneading was completed leaven was generally added. This was composed of various substances, but the ordinary leaven consisted of a lump of old dough in a high state of fermentation, inserted into the mass of dough prepared for baking; but when time was short for preparation it was omitted and unleavened cakes hastily baked were eaten, as is still the prevalent custom among the Bedouins. The leavened mass was allowed to stand for some time. The dough was then divided into

round cakes not unlike flat stones in shape and appearance, about a span (about nine inches), in diameter and a finger's breadth (about three-fourths inch), in thickness. The cakes were sometimes punctured, and hence called *challah*, and mixed with oil. Sometimes they were rolled into wafers merely annointed or coated with oil. The cakes were now taken to the oven having first, according to the practice in Egypt, been gathered into "white baskets." The baskets were placed on a tray and carried on the baker's head. In the towns where professional bakers resided, there were no doubt fixed ovens, in shape and size resembling those in use among ourselves, (brick ovens), but usually each household possessed a portable oven, consisting of a stone or metal jar about 3 feet high, which was heated inwardly with wood, dried grass and flower stalks. Other modes of baking specially adapted to the migratory habits of the pastoral Jews as of the modern Bedouins,—the cakes were either spread upon heated stones or they were thrown into the heated embers of the fire itself. Other methods were used for other kinds; some were baked in a pan, such cakes being used for sacred offerings.

The flour for such bread was laboriously ground in a portable mill consisting of two circular stones of about eighteen inches in diameter, the upper stone fitting over the under, which was fixed, was turned by an upright handle near its edge, by one and sometimes two women, usually seated on the bare ground facing each other; the one whose right hand is disengaged throws the grain, as occasion required, through a hole in the upper stone, through which a pivot or shaft rises from the centre of the lower one."

In contrast to such processes, I quote the following from *Leffel's Milling News* (English) and the method of transportation then and now:

"When the Queen's baker received the first barrel of this year's American wheat crop, he presented a loaf of bread made thereof to her majesty, and issued a circular to his customers, saying: "We take the liberty of forwarding to you a small loaf of bread, made from flour of this year's crop. Such an

early production in the month of May, is an unheard of novelty, and almost incredible. Of the many wonders we, who have the good fortune to live in the nineteenth century, have been the witnesses, we venture to think that to eat bread, which is the results of the 1880 harvest in May, 1880, is not one of the least marvelous."

Before leaving this subject, we cannot but notice a new kind of bread, which, however, will not take the place of wheat bread or probably compete with it in Essex County, at present. I quote from the Confectioner's Journal of November, 1880: "There has been lately turned out at Milan, a new kind of bread, made with blood from raw flesh. It is said to be a preventive of scurvy, and to do away among peasants with all desire for alcoholic drinks. The difficulty of blood coagulation being overcome, the "blood bread" will last for years. Twenty per cent. of its ingredients consists in blood; its cost is only two-thirds of a cent per loaf, and it is more nutritious than the ordinary loaves at one cent each."

Bread, with *Honey*, or a little preserve, jelly, or even a pickle, do not detract but rather adds to its merits, as your committee took occasion to test, thereby adjusting their awards knowing the quality of articles of which they spake.

The Honey exhibited was very fine, the past season having been found by the bees to have been a good one for storing their choicest sweets, and by their keepers also, when they realized how much surplus honey could be removed from their hives.

Our county is capable of producing a much greater amount of honey than it now does, and it should be encouraged to do so by our Society, in offering liberal premiums for the best methods of obtaining it, our swamps and woods being filled with wild flowering shrubs and our meadows with "white clover," while our roadsides and hill tops are dyed with the golden hues of the "golden rod," nearly all of which, capable of making the best of honey, wastes its sweetness in the dewy air.

Bees are easily raised and kept, we having wintered them on

their summer stands, in common and in movable frame hives, without any extra care or precaution in protecting them from the winter's cold. In suitable hives, with proper care, they can be made very profitable.

The improved breeds of bees, with improved hives such as the "Massachusetts movable comb Bee-Hive," made by Mr. Alley of Wenham, (which we have proved to be good), and the "Lynn movable Comb Hive," made by Mr. Russell of Lynn, shows that we need not go out of our own county to procure the best hives, or the best bees, for Mr. Alley makes the raising of *Queen Bees* a specialty. These, with other improved facilities for keeping bees and assisting them in their industrious efforts, with improved facilities of handling them with safety, have made Bee-keeping of the present day easy of successful attainment, especially when compared with the uncouth hives and barbarous method of former days in obtaining the honey from them by killing the bees, obtaining very inferior honey at that. Now, by taking out the little movable boxes, in which the bees store their surplus honey, weighing one pound and upwards, which are placed over and by the side of the movable combs in the main hive, which if filled at the time any particular flower is in bloom, from which the bees are gathering honey, *then knowing just what the honey is made from.* Samples of three kinds of honey were shown by Mr. Alley at the Fair, each having a distinctive taste ; they were made from White Clover in June, Pepper-wood in August, and Golden rod first of September. He called that made from White Clover best; we, however, for our taste, preferred that from Pepper-wood and Golden rod, they having more flavor.

Preserved Fruits, in jars and tins, are now almost indispensable on sea and land ; in the home of the mariner while plowing the ocean, as well as in the home of the farmer who plows the land. Great improvements have been made in late years in canning fruits, and at this year's Fair a lady of our county exhibited 74 different varieties of fruit of her own pre-

paring. She also exhibited a can of *fresh Milk*, although it was *seven months old*, preserved in a common self-sealing glass can.

Jellies being such a delicious appetizer with bread and meats, and for the delicate appetite of the sick, deserve a place in every household. Your Committee had but one fault to find with those exhibited this year, and that was their uniform sweetness, too sweet in fact, when made from fruits whose peculiar acidity is their charm, that acidity being entirely lost in the jelly.

The Pickles exhibited were excellent, especially the large number of varieties made by Mrs. Ladd, the pickled peaches and pears of Mrs. Hill, and the supurb little cucumbers of Mrs. Fuller's make, who fully sustained her reputation of last year in this line, (her receipt for making them can be found in last year's report of the "Vegetable Committee"); as it is short we give it again after Jelly statement in this report.

Your Committee have recommended *a premium on Dried Apples*, seeing no reason why the Society should not offer this inducement in ascertaining means by which this crop, so abundant with us, can be disposed of with profit. Other dried fruits should receive encouragement when worthy of it, for the present, however, by means of gratuities.

Cake and Pastry, which, although the society offer no particular inducement for their exhibition, your committee found the articles exhibited choice enough to grace any table, and for which gratuities were awarded. Those from Griffin's bakery of Lynn, being in a large show case, added much to the display in this department, yet the Committee have serious doubts of the expediency of encouraging exhibitors of Cake and Pastry, except, perhaps, for *displays* by Bakers where the *merits of the articles* are not in question and where such displays are in glass cases. Speaking of glass cases, how much the Society could add to the success of this department of the Fair, and still more to the Butter department, by hiring glass cases for the display of bread and butter. It would save a great deal of care from the Hall Committee, and enable the exhibit to be shown to better

advantage by keeping flies and fingers off and labels on, which would be much more gratifying to the exhibitors and the committees, and also to the majority of those looking at the exhibits.

Your attention is called to the valuable and interesting statements which accompany this report, the whole of which is respectfully submitted for the Committee.

DAVID W. LOW, *Chairman.*

Authorities quoted,—"Holy Bible," "Smith's Dictionary of the Bible," "The Norfolk Farmer," "Confectioner's Journal," Bradstreet's, &c.

STATEMENT OF MRS. GEORGE T. ESTES OF LYNN.

Awarded first gratuity for excellent Bread and one for Fruit Cake.

This is *my receipt for Bread* making :—4 quarts of Flour, 1 quart of Water, 1 tablespoonful of Lard, 1 half pint of potato yeast, 1 quart of milk, 1 tablespoonful of sugar, 2 spoonfuls of salt.

Make your bread over night, kneading about half an hour ; put it in a warm place to rise, kneading it in the morning, using as little flour as possible ; put it in your baking pan and let it rise about twenty minutes and you have it ready for the oven. My rule for heating the oven is to have it hot enough so that you cannot hold your hand in it, for too much heat will brown it too much, and your bread will have large holes in it. I use the best of Haxall flour. My baking pan is 12 in. long, 7 in. wide and 8 in. deep, and my stove is No. 2 Union range.

My receipt for Yeast is,—Grate 6 large Potatoes, add 1 quart of water, half a cupful of brown sugar, 2 spoonfuls of salt, half a pint of hop yeast, using Baker's yeast to put in my own. Keep it in a cold place to keep it from getting sour.

My receipt for Fruit Cake is,—2 pounds of Currants, 2 pounds of Raisins, 1 of Citron, 1 of Butter, 1 of Flour, 1 of Sugar, 8 Eggs, 1 spoonful each of all kinds of spice, wine, a glass of pale brandy, a half cup of molasses and half a spoon-

ful of soda. Bake 4 hours; frosting with whites of 2 eggs and 1 pound of sugar beat together.

STATEMENT OF DORA B. EATON OF LYNN,

who was awarded the second gratuity for excellent bread.

This loaf was made by Dora B. Eaton, in the following manner:—

Two quarts of flour, with a pinch of salt stirred in, were shortened with a small spoonful of lard. One compressed yeast cake dissolved in luke-warm water was placed in a hole in the middle of the flour, and the whole mixed with a quart of water and well kneaded; left to rise all night. In the morning it was again well kneaded, put into the pans and allowed to rise until the pans were full; then placed in the oven and baked about an hour.

STATEMENT OF CLARA L. EDMANDS, OF LYNNFIELD, (*aged* 13 *yrs.*),

who had excellent bread and was awarded the third gratuity.

I entered for your inspection wheat bread made in the following manner:—Half pint each of milk and water; one heaping spoonful each of sugar and salt, one-quarter of a Vienna yeast cake, and one quart of flour.

Manner of mixing,—Put all the ingredients into a pan large enough to mix easily, having the milk and water slightly warm; knead it 15 minutes with hands; cover with a cloth and rise over night; next morning knead slightly; divide it into four parts and put into a tin baking pan 9 inches long, 3 inches high, and 5 inches wide. Let it rise even with top of pan and bake in moderate hot oven 30 minutes. Mine was baked in a "Union Range." The flour used was common grade of Haxall.

STATEMENT OF MRS. ALLEN SMITH, JR., OF ROCKPORT,

awarded the fourth gratuity for bread.

The bread was made as follows:—4 qts. of Haxall flour, 1 pt. of new milk boiled, 1 pt. of cold water, 1 cup of potato

yeast. First I sifted the flour and made a hole in the centre; then poured in the mixture of milk, water and yeast, with perhaps a teaspoonful of butter. I let it remain about three hours, then kneaded it up with my hands, probably about ten minutes, then let it rise until very light; I then kneaded it about ten minutes more, and put it in pans to bake; let it rise an hour or until light. Bake one hour in a moderate oven. Mine was baked in an Arlington Portable Range. There was one pound and two ounces in each loaf.

My rule for Potato Yeast is two common sized potatoes raw, half cup of white sugar, tablespoonful of salt, one quart of boiling water. Pare, wash and grate the potatoes, add the sugar and salt, pour the boiling water over, and allow the whole to boil two or three minutes, then let it cool sufficiently and add half a cup of yeast.

STATEMENT OF MRS. SAMUEL B. BOND, OF LYNN.

Awarded fifth gratuity for bread.

The bread was made of the best Family Flour, 2 quarts, one tablespoonful of lard, one teaspoonful of salt; mix with milk and water, milk warm, half a compressed yeast cake, then mixed to a stiff dough, well kneaded, and left to rise over night; in the morning knead it again, mould it into loaves, and left to rise again until quite soft; baked in a moderately hot oven about one hour.

STATEMEMT OF MRS. J. GAGE, of MIDDLETON.

Awarded gratuity for best Graham Bread.

Wheat Bread,—5 lbs. flour, cup of yeast, a little salt, 2 tablespoonfuls of lard, mix not very hard, rise three hours, mould over and let it stand 2 hours; make into loaves, allow half or three-quarters of an hour more to rise. Have a hot oven and bake slowly one hour.

Graham Bread,—Made same as Wheat with addition of a half cup of molasses. It does not require as much time to rise.

Yeast,—4 potatoes boiled, 4 tablespoonfuls of flour, 2 tablespoonfuls of sugar, small handful of Hops; peel potatoes, strain and rise 4 hours.

STATEMENT OF PHIL R. RUSSELL, JR., IN RELATION TO BEES AND HONEY.

David W. Low, Chairman of Committee on bread, honey, &c.:

DEAR SIR:—In answer to your favor of Oct. 11, I have to say, I began to keep bees in 1867, and during these thirteen years, I have gained a knowledge of their successful management which is of great value to myself and possibly to others who may take an interest in this delightful subject. At first, for a number of years, I met with only indifferent success, losing each winter about as many colonies as I could build in the summer. I tried both indoor and outdoor wintering, with the advantage slightly in favor of the latter, until I was convinced that the trouble was mainly in the style of hive I had adopted and that I could not reasonably hope for success until I provided a hive that would more nearly meet the wants of the bees.

The requisites of a good movable comb hive I consider to be substantially as follows:

1st. Its wintering qualities should be such that it may safely remain upon its summer stand during winter, with ample provision for the escape of redundant moisture, while they are kept warm and free from cold drafts.

2d. It should be sufficiently compact in shape to permit the bees to cluster naturally, with honey at all times within easy access, above and around them, and thus economize the animal heat for rapid breeding in early spring and to guard against cold.

3d. It should admit of being worked to the best advantage for either comb or extracted honey, and the brood department enlarged or contracted to meet the wants of any colony.

4th. The brood combs should be ten inches deep in the clear, and eight of these combs occupying about 2000 cubic inches will be ample to winter the largest colony.

5th. It should be double walled to protect it alike from summer's heat and winter's cold, packing the intervening space in winter with straw or the like, and thus require no other protection.

Such a hive I have devised and I find by applying the test to practical use, that it fills the bill in every particular. I have christened it "The Lynn Movable Comb Hive." I do not claim that every feature of it is my own invention, but that I have simply adopted and improved upon the bright ideas of honored inventors and combined them in practical manner for my own use.

In working a hive for box-honey, I believe it is best to use the small single-comb section boxes holding about two pounds, each arranged in a clamp or case placed directly over the brood frames with only a quarter inch space intervening. When about two-thirds filled, raise them and place a case of empty ones under them. When finished, remove them and thus continue during the season and not dishearten the bees by removing all the honey in the surplus department at one time.

Those who would reach the maximum of success with their bees, should take advantage of all the improvements in their management, prominent among which I will mention four that seem to me to be nearly indispensable.

1st. A good style of movable comb hive.

2d. The Italian race of bees.

3d. The use of comb foundation.

4th. The honey extracting machine.

In conclusion I wish to say that the honey bee has challenged the attention and admiration of mankind in all ages, for its wonderful instincts, tireless industry and indomitable courage, and her attractive stores were doubtless the first and only sweets that fell to the lot of man for centuries. And yet it is only within the last fifty years that anything like a rational system of management has been attempted; but their natural history, instincts and requirements are now so well

understood that it has lifted this industry out of the domain of luck and chance to the level of one of the most certain and successful employments.

Amid the great army of noxious insects that are ever contending with man for the right of possession to the products of the garden and field, it is refreshing to meet with a few like the honey-bee, who are friendly to man and work in his interests. I claim for the bee that it stands at the head of all useful insects and brings the largest blessing to man, not even excepting the silk worm. While the latter gives us only a single product, the bee serves a four-fold purpose yielding wax and honey, and as an agent in the fertilization of blossoms; even in death her body is used as a medicinal article.

Why is the honey placed in the blossoms? Certainly to attract the bee that she may bring with her the pollen from other blossoms, and thus fertilize those that would otherwise prove sterile and fruitless. In this realm of nature the service of this great conservator of nature's bounty is, to man, beyond calculation. It has been estimated that each square mile will produce annually 640 pounds of honey on an average. This would give to Massachusetts, with her 7800 square miles, two thousand five hundred tons of honey. But a mere fractional part of this vast quantity is ever gathered.

There is no part of Essex county so barren but what a few colonies of bees would do well.

This industry has been allowed to fall into decline in our section and for reasons which I will not discuss, but which the march of improvement has rendered invalid at the present time; and I would say *rally!* A brighter day has dawned upon this industry and my advice to the farmers of old Essex, and to all others who do or can control a few rods of land is, *Keep Bees.*

Very respectfully yours,

PHIL R. RUSSELL, JR.

LYNN, October 15, 1880.

STATEMENT OF HENRY ALLEY, OF WENHAM, IN RELATION TO BEES AND HONEY.

To Chairman of Committee on Bread and Honey:

The honey exhibited at the Fair (about 35 lbs.), was but a small part of the amount stored in small boxes the past season by five (5) hives of bees. The bees were hybrids, a cross between black and the Italians. Twenty-one boxes, holding about two pounds of honey, are placed on the hive over the bees and brood, and 12 boxes, holding about 1½ pounds honey each, are placed at the sides of the brood combs, making 33 boxes in all for the bees to work in at the same time. Each row of boxes has a tin or wooden separator placed between them to compel the bees to build their combs directly within the boxes. The bottom of the boxes are made a quarter of an inch narrower than the top, thus leaving room for the bees to pass up from the main hive into them.

These hives are known as the "Massachusetts Movable Comb Bee Hive" and have been in use 6 years; five colonies of bees stored about 500 pounds of honey. It was gathered from fruit blossoms, white clover, pepper-wood and golden-rod. That from fruit blossoms and clover was stored in May and June; that from pepper-wood in August, and golden-rod in September. The pepper-wood is found in the low lands in our county and blossoms profusely for about ten days in August. Dry and hot weather, such as prevailed during the past season, is considered very favorable for the bees where this plant or bush abounds. The honey is very light in color and excellent in quality; in fact, it is the finest honey to be found in our markets. Our bees gather large quantities of honey from the yellow weed or golden-rod, especially was this the case the past season. Honey from this weed, as a general thing, is poor in quality, rather dark, and will not bring a good price in the market. On account of the favorable weather the past season, honey gathered from golden rod was quite as good as that taken from white clover.

More bees should be kept in the county; with good hives

and a little care at the right time, bees will pay 50 per cent. on the capital invested in them. Our farmers should keep bees. Customers who purchase their eggs, milk and other products, would purchase their honey, as they would know that honey raised and sold by them would be as pure as their milk and butter. There is forage enough in the county of Essex for 10,000 hives of bees. Tons of honey go to waste every year, as there are no bees to collect and store it in hives. During the past ten years great improvement has been made in hives and implements for handling bees. Now that we have the "Improved Quimby Bellows Smoker" for quieting bees while handling them, there is but little danger of being stung.

We also have three new races of bees: the Italians, first imported in 1860; the Cyprian bees, imported in 1878, and the Hungarians, first imported in 1879. The Italians are very handsome, as well as very gentle, and are superior honey-gatherers. The Cyprian bees resemble the Italians, but are considered rather better honey gatherers. The Hungarians are nearly as dark colored as our native bees, but they are much more gentle and are as good honey gatherers as the Cyprian or the Italian.

If I were not so much interested in bees and honey I would suggest that the Society offer a premium of $10 for the best display of bees, honey, hives and Apiarian implements, and above all give us a committee on bees and honey composed of men who are practical bee keepers. Let the ladies take care of the bread, pickles and preserves. Respectfully,

H. Alley.

Wenham, Nov., 1880.

STATEMENT OF MRS. J. HENRY HILL, OF AMESBURY,
who received gratuity for several varieties of Jellies.

The Jellies exhibited by me at Lynn were made by using equal parts (either by weight or measure), of the expressed juice of fruit and sugar.

The exact time of boiling cannot be given, as it varies in

different fruits and according to the ripeness of the fruit used. I boil the syrup until it drops thick from the spoon. I know of no other way of making *pure jellies* than by using the same proportion of sugar and fruit. I do not recommend anything but acid fruit in the preparation of jellies for family use, although some of our Lynn friends seem to differ from the committee, as several jars of the *sweetest varieties* mysteriously disappeared, borrowed as samples, I presume for competition at the exhibition of '81.

STATEMENT OF MRS J. FULLER, OF MIDDLETON, *who received a gratuity for the best cucumber pickle.*

The cucumbers were picked every other day, and were prepared for pickles as follows :—Scald in salt and water twice, let them stand twenty-four hours each time; one cup of salt to one hundred pickles, and then scald them in weak vinegar; after which put them in jars, and fill up with strong scalded vinegar, with a piece of alum size of a pea, which hardens the pickles. They keep better in sealed jars.

PEARS.

The Committee award to best plate 24 specimens, Urbaniste pears, Breed & Co. Lynn, premium $6 ; Belle Lucrative, W. B. Allen, do, 3 ; Beurre Bose, H. C. Whippen, do, 3 ; Beurre Clairgeau, Mrs. E. Lovjoy, do, 3 ; Beurre d'Anjou, John O'Brien, Bradford, 3 ; Buffum, A. J. Hubbard, Peabody, 3 ; Clapp's Favorite, Peter Waite, Danvers, 3 ; Duchesse, Edwin Bates, Lynn, 3; Dana's Hovey, J. R. Parker, do, 3; Lawrence, B. F. Ricker, do, 3; Louise Bonne de Jersey, John O'Brien, Bradford, 3; Marie Louise, F. L. Cushman, Lynn, 3 ; Onondaga, Sylvester Parrott, do, 3 ; Seckel, John O'Brien, Bradford, 3 ; St. Michael Archange, Patrick Tracy, Salem, 3 ; Sheldon, C. A. Proctor, Peabody, 3 ; best collection, E. F. Webster, Haverhill, 8; 2nd, J. Henry Hill, Amesbury, 6; 3rd, Peter Waite, Danvers, 4.

Best 12 specimens Urbaniste pears, S. B. Pratt, Lynn, premium, $3; Vicar, Edwin Bates, do, 3; Winter Nelis, J. W. Milliken, do, 3; Paradise d'Automne, Henry Alley, Wenham, 3; Doyenne de Comice Peter Waite, Danvers; Howell, N. B. Skinner, Lynn; Gansell's Bergamot, W. B. Allen, Lynn; Glout Morceau, Z. C. Wardwell, Groveland; Flemish Beauty, Jno. Currier, Amesbury, Beurre Diel, M. Plumstead, Jr., Lynn, gratuities of $1.50 each. Pears, John O'Brien, Bradford; Amos Rhodes, Lynn; Geo. Pettingill, Salem; John V. Stevens, Peabody; Peter M. Neal, Lynn; Breed & Co., Lynn; J. Fitts, Lynn; J. Henry Hill, Amesbury; J. P. Chandler, Salem; R. Goodwin, Haverhill; H. B. Leonard, Danvers; Franklin Upton, Danvers; gratuties of $1 each. Pears, P. Malone, Lynn; C. B. Lord, do; Sam'l Soule, do; C. H. Aborn, do; Edwin Bates, do; W. B. Allen, do; Moses Rich, do; Joseph Ross, Marblehead; Harmon Hall, Saugus; Geo. H. Pearson, Saugus; A. C. Osborn, Peabody; Benj. F. Calley, Saugus; Lewis Tarr, Rockport; gratuties of 50 cents each.

THOS. C. THURLOW, *Chairman.*

APPLES.

Baldwin, S. B. George, Groveland; Danvers Winter Sweet, H. C. Whippen, Lynn; Drap d'Or, D. M. Verry, Danvers; Hubbardston, T. G. Ordway, West Newbury; Porter, T. C. Thurlow, West Newbury; Pickman Pippen, Oscar F. Ingalls, Lynn; Red Astrachan, Augustus Verry, Danvers; Roxbury Russet, T. C. Thurlow, West Newbury; Rhode Island Greening, Alfred Ordway, Bradford; Seaver Sweet, Franklin Upton, Danvers; Sweet Baldwin, Andrew Dodge, do; Hunt's Russet, Wm. L. Weston, do; Haskell's Sweet, Augustus Verry, do; Hurlburt, Joseph Knowlton, Hamilton; Gravenstein, John Taylor, Amesbury; premiums of $3 each. Fall Pippen, John C. Vennard, Lynn; Ramsdell Sweet, Geo. L. Hawkes, Lynnfield; Tallman Sweet, Z. C. Wardwell, Groveland; King of Tompkins Co., Geo. Norwood, Lynnfield; premiums of $1.50

each. Collection of apples, Henry Verry, Danvers; G. C. Noyes, Lynn; Shillaber Farm, Peabody; J. A. Jones, Lynn; B. P. Ware, Marblehead; J. A. Rose, Marblehead; Geo. B. Austin, Boxford; S. M. Titcomb, West Newbury; E. J. Thompson, Lynn; Otis Nichols, Lynn; Andrew Curtis, Peabody; Breed & Co., Lynn; S. P. Newhall, Peabody; Mrs. A. R. Warren, Lawrence; gratuities of $1 each. E. G. Hyde, Danvers, gratuity, $2; J. H. Hill, Amesbury, do, Birds of New England. R. I. Greening, Thomas A. Sides, Groveland; Gravenstein, Henry Verry, Danvers; Collection, James P. King, Peabody; do., J. F. Smith, Salem; gratuities of $1 each. Best collection of largest number recommended, Peter Waite, Danvers, 1st premium, $8; 2nd do, Z. C. Wardwell, Groveland, 2d premium, $6; 3d do, Chas C. Blunt, Andover, 3d premium, $4; best 24 specimens of apples, John O'Brien, Bradford, premium, $6; Snow Apple, H. E. Goss, Lynn; Spitzbergen, E. G. Hyde, Danvers; St. Lawrence, T. C. Thurlow, West Newbury; Northern Spy, do, do; Crab Apples, H. B. Leonard, Danvers; do, G. F. Mason, Andover; do, Amos K. Noyes, do; gratuities of $1.50 each.

WILBUR F. NEWHALL, *for Committee.*

PEACHES, GRAPES AND ASSORTED FRUITS.

F. W. F. Peaches, E. F. Webster, Haverhill, premium $2; Y. F. do, Arthur N. Breed, Lynn, do 2; Essex Co. Seedling, do, Otis Nichols do, do, 2; collection do, E. F. Webster, Haverhill, do, 3; Stump of World, Asa A. Breed, Lynn, gra. .50; Seedling do, Jas. B. Chase, do, do, .50; Concord Grapes, John O'Brien, Bradford; Worden Seedling, do; Rogers No. 3, Rogers, No. 19, Rogers, No. 39, G. W. Gage, Methuen; Hartford, do, Chas. E. Pecker, Lynn; Brighton, do, do, do; Isabella, do, Nelson Todd, do; Delaware do, R. Goodwin, Haverhill; Diana do, do, do; Iona, do, Wilbur F. Newhall, Saugus; Clinton do, do, do; Creveling do, Franklin Upton, Danvers; Rogers 22 do, do, do; Israella do, Franklin Bach-

eller, Lynn; Eumelan do, Z. C. Wardwell, Groveland; Rogers No. 4 do, J. M. Lewis, Lynn; do, No. 15 do, Jos. W. Law, do; premiums of $3 each. Collection cold house grapes, W. H. Brown, Peabody, premiums, $6; do, ten varieties do, G. W. Gage, Methuen, $7; Peter Waite, Danvers, assorted fruit, 1st prem., 4; Mrs. E. Lovejoy, Lynn, col. exotic grapes, gra., 1; Geo. W. Stickney, Beverly, black Hamburg grapes, gra., 50 cents; G. W. Gage, Methuen, do, do, 50 cents; Z. C. Wardwell, Groveland, Delawares, gra., 50 cents; G. W. Ladd, Bradford, seedling, gra., 50 cents; F. W. Nichols, Lynn, native grapes, gra., $1; R. Goodwin, Haverhill, Concord grapes, gra., $1; E. A. Putnam, Lynn, Croton grapes, gra., 50 cents; Oscar F. Ingals, Lynn, Isabella grapes, gra., 50 cents; G. D. Walton, Lynn, Clinton grapes, 50 cents; J. N. Lindsey, Lynn, Isabella grapes, 50 cents.

FLOWERS.

The Flower exhibition at our annual fair in all but flowers in series of twelve, was a credit to the society and to the ladies of Lynn, who for the most part sustained it. The deficiency of the display in series of twelve of a kind may be in part explained, by the fact that we had a storm about a week previous to the day of exhibition, and no one part of the Society's annual display begins to suffer as much from such a cause as the flower department. Still we must confess to some disappointment at seeing so many empty bottles. In the display of Bouquets and Floral Designs, the exhibition was exceptionally fortunate. Rarely, if ever has it been the good fortune of the chairman to see anything so exquisitely beautiful as was the floral horse shoe. Amid so much that was beautiful it is hardly pleasant to write a word of criticism, but for the sake of the highest excellence in this department, it may be suggested as the general judgment of the committee that while all were elegant and attractive, in some of the bou-

quets the flowers, though beautiful in themselves, were too crowded, put together on about one level, and consequently were lacking in that light, airy effect which is so essential in a good boquet.

The most instructive exhibit was that by Miss Tracy of one hundred and fifty varieties of native flowers and fifty varieties of fruits of native flowers, all very neatly labelled, and on each label the common, as well as the scientific name, each written in a clear, round hand, and almost as easy to read as print. This was really the gem of the exhibition, if we consider either the great labor necessary to bring so large a variety together, each from its own wild habitat, or the rare opportunity for instruction which this little side school afforded. We know of one gentleman who thought so highly of it that he started from a neighboring town, by the first train, to see if five dollars would buy the dry remnant of it for the instruction of his children. The flowers of the garden we meet only in a few mere scattered dots of land, but the wild native flowers meet us at every step of our walks in the woods and fields. How vastly more important therefore is it that we should know the names of the latter than of the former; besides is there not a place here for a patriotic plea—they are *our own*, our native flowers, to the Manor born.

The Committee award as follows;

Best parlor boquet, J. Halliday, premium, $3; pair hand boquets, H. Young, 2; floral design, Mrs. J. O. Gile, 2; cut flowers, Mrs. L. P. Weston, Danvers,2; 12 dahlias, H. Downing, 1; 12 Gladioli, J. F. Marble, Lynn, 1; 12 petunias, Jonathan Hay, 1; display of pansies, Anna Gregory, Marblehead, 12 verbenas, S. T. Goodwin, 1; display of native flowers, Mrs. Susan A. Tracy, Lynn, 3; 12 double Zinnias, Anna Gregory, Marblehead, 1; 12 cockscomb, Laura Gregory, do, 1; display of Drummond's phlox, S. T. Goodwin, 1; do salpiglossis, C. H. Whippen, Lynn, 1; 12 African marigolds, Laura Gregory, Marblehead, 1; do French do, L. P. Weston, Danvers, 1; display mourning bride, H. C. Whippen, Lynn, 1; varieties can-

dytuft, Clara N. Nichols, do, 1 ; do feathered cockscomb, H. C. Whippen, do, 1; do double stocks, S. T. Goodwin, 1; 12 lilliputian dahlias, J. T. Marble, Lynn, 1 ; double and colored balsams, Clara M. Nichols, do, 1 ; display Nasturtiums, William Stone, 1. Parlor bouquets, S. T. Goodwin, gratuties 1; do do, H. Young, 1 ; dish cut flowers, S. T. Goodwin, 1; table design, Mrs. Geo. Atkinson, 1; floral harp, A. Lord, 1 ; floral horse shoe, H. Young, 1 ; basket of flowers, Mrs. Plumstead, 1 ; design of flowers, Mrs. Plumstead, 1 ; table design of flowers, John Halliday, 1; cockscombs, Dr. Leon Rideout, 1 ; cockscombs, Mrs. D. H. Sweetser, 1 ; asters, Mrs. M. P. Nichols, 1 ; display of native flowers, Miss Susan A. Tracy, Lynn, 1 ; japonica, H. C. Whippen, do, 1 ; dahlias, N. Lindsey, 1 ; fernery, John W. Darey, 2 ; mixed eternal flowers, Mrs. G. H. Wickford, 2 ; variety everlasting flowers, Mrs. M. P. Nichols, 2 ; pot plant, Irving Atwill, 1 ; best display pot plants, John Wooldridge, Lynn, 4.

J. J. H. Gregory, *for the Committee.*

VEGETABLES.

The Committee on vegetables beg leave to submit the following report:—The Chairman and Mr. Hawkes, a member of the committee, met directly after the business meeting was over, and waited two hours for the other members, and then had to make up the committee as best we could. I think when men are put on committees, if they cannot serve they should give notice to the chairman, then he can make up the committee and proceed to business at once.

I never saw better specimens of vegetables, take them all together, than was exhibited. We find that exhibitors pay but little attention to the rules of the society in regard to the number of specimens, some having a much larger number than was called for, and others were deficient ; one lot of corn was entitled to the first premium, but there was not the requisite

number of ears. Owing to the delay in getting the committee, I was obliged to leave before all the premiums were awarded.

Your committee would insist that the Superintendent of the vegetable department see that all the vegetables of the same variety be placed together. This would save half the time of the committee who, in comparing the specimens, would be able to judge correctly, and give better satisfaction in the short time they have to do the work. We tried to do the best we could. We award as follows:

T. B. Beet, Levi Emery, Lawrence, premium, $3. L. O. Carrot, S. H. Carrot, Abbott Imperial Parsnip, $3 each; stone mason cabbage, cauliflower, 2d premium, $2 each; B. M. celery, water melon, musk melon, 1st premium, $2 each, M. T. Batchelder, Peabody; Mangolds, E. R. Onions, D. cabbage, R. S. corn, marrow squash, Marblehead squash, A. T. Newhall, Lynn, 1st premium, $3 each. P. T. turnips, H. A. Stiles, Middleton, 1st premium, $3; Y. ruta bagas, M. S. Jenkins, North Andover, 3; Danvers onion, S. F. Newman, Newbury, 3. Y. F. onion, E. R. potatoes, beauty of Hebron potatoes, A. Green, Salisbury, 1st premium, $3 each, Goodwin's seedlings, No. 1, R. Goodwin, Haverhill, premium, $3; E. O. potatoes, J. J. H. Gregory, Marblehead, 3; D. Cabbage, 2d premium, $2; mammoth cabbage, 1st premium, $3, nutmeg melon, 1st premium, $2. R. F. tomato, greatest variety tomato, premium, $3 each. Greatest collection, J. J. H. Gregory, Marblehead, prem., $8. Second greatest collection, 2d premium, "Birds of New England," Hatch Brothers, Saugus; Dunmore potatoes, Acme tomato, Essex Hybrid tomato, Aaron Low, Essex, premium, $3 each; savoy cabbage, J. G. Munsey, Beverly, 1st premium, $3; savoy cabbage, J. W. Blodgett, Saugus, 2d premium, $2; red cabbage, J. W. Blodgett, Saugus, premium, $3; stone mason cabbage, David Warren, Marblehead, premium, $3; red cabbage, C. R. Anderson, North Andover, 2d, $2; cauliflower, do, do, 1st premium, $3; yellow corn, S. Longfellow, premium, $2; silo corn, Caleb Childs, Marblehead, $2; popping corn, Edwin

Beast, Lynn, premium, $3 ; turban squash, Levi Emery, Lawrence, $3 ; hubbard squash, W. A. Jacobs, Danvers, $3 ; cranberries, H. A. Stiles, Middleton, $3 ; cranberries, C. C. Blunt, Andover, 2d, $2 ; cranberries, Edward J. Johnson, Nahant, 3d, $1 ; potatoes, G. L. Hawkes, Lynnfield, gratuities, $2; cranberries, C. C. Blunt, Andover, $1 ; squashes, Mrs. D. M. Estey, Middleton, $1 ; winter rye and beans, J. W. Blodgett, Saugus, $2 ; potatoes, Alfred Green, Salisbury, $3 ; potatoes, Virgil Dow, Methuen, $1 ; peppers, J. H. Hill, Amesbury, 50 cents ; citrons, E. G. Hyde, Danvers, $1 ; squashes, Shillaber Farm, Peabody, $1 ; squashes and potatoes, Aaron Low, Essex, "Birds of New England" ; squashes, A. C. Osborne, Peabody, $1 ; herbs, M. F. Batchelder, Peabody, $1 ; corn, John Raddin, Lynn, $1.50 ; potatoes, S. L. King, $1 ; potatoes, Paul T. Winkley, Newburyport, $1 ; potatoes, J. D. Kelley, Salem, 50 cents ; onions, R. Goodwin, Haverhill, $1 ; squashes, H. N. Skinner, Peabody, $1 ; potatoes, W. A. Jacobs, Danvers, $1 ; cabbages and squashes, David Warren, Marblehead, $2 ; potatoes and onions, F. P. Todd, Rowley, $1 ; cabbages, J. G. Munsey, Beverly, $1 ; potatoes, G. W. Winslow, Hamilton, 50 cents ; beans, E. F. Webster, Haverhill, $1 ; squashes, James Looney, Marblehead, $1 ; corn, T. J. Ordway, West Newbury, $1 ; turnips, M. F. Batchelder, Peabody, 50 cents ; squashes, J. W. Blodgett, Saugus, 50 cents,

LEVI EMERY, *for the Committee.*

COUNTERPANES, &c.

The Committee award as follows :

Silk quilt, Mrs. J. S. Butler, 1st premium, $4; silk quilt, Mrs. Geo. H. Pierson, Salem, 2d premium, $2; quilt, Mrs. Thos. D. Davis, gratuity, $1.50 ; do, Mrs. E. A. Patterson, Danvers, do, Mrs. Daniel Low, do, do, C. A. Buckley, do, do, Mary E. Daley, do, do, J. S. Butler, Salem, do, Mrs. Sarah Hayward, do, do, 50 cents each ; do, Mrs. J. B.

Johnson, Lynn, 1; rug, Mrs. H. Caswell, Peabody, 1st premium, $4; do, Mrs. H. M. Perkins, do, 2d premium, $2; do, Lizzie Buxton, Beverly, gratuity, $1; do, Mrs. Joanna Smith, Lynn, do, Mrs. A. M. Wooldredge, do, 50 cents each; do, Mrs. C. H. Stickney, do, $1.25; do, Mrs. L. D. Clark, do, do, Mrs. J. F. Kimball, do, do, Mrs. A. Haskell, do, do, Mrs. A. Wilcox, Beverly, do, Mrs. N. P. Davis, do, do, Mrs. Hannah Madison, Marblehead, 50 cents each; do, Mrs. L. P. Jackson, Lynn, $1.

ARTICLES MANUFACTURED FROM LEATHER.

The Committee award as follows:—

T. W. Tyler & Co., Lynn, leather belting, soles, taps, &c., diploma and $5; Alfred E. Newhall, Lynn, boots and shoes, diploma; C. A. Coffin & Co., Lynn, boots and shoes, diploma; J. T. Todd, Lynn, boots, gratuity, $2; E. A. Putnam, Beverly, buggy harness, gratuity, $5; Henry Hobbs, Wenham, harness, gratuity, $10; M. E. Kenney, Salem, buggy saddle, gratuity, $3.

Stephen Oliver, Warren Newhall, Amos Poor, Aaron Sawyer, Geo. H. Peabody—*Committee.*

MANUFACTURES AND GENERAL MERCHANDISE.

The Committee award as follows:

Russia Cement Co., Rockport, belting, cement, and liquid glue, diploma; National Food Co., Lynn, samples of prepared food for horses and fowls, gratuity, $1; W. H. Shirley, Danvers, window bracket, gratuity, $1; W. E. King, Lynn, confectionery, diploma; N. M. Plummer, Rowley, meal and flour, gratuity $2; R. S. Whittier, Chelsea, standard elevator, gratuity, $3; Ezekiel Goss, Salem, work box, gratuity, 50 cts.; George E. Marsh, Lynn, soaps, gratuity, $2; George H. Cush-

man, Lynn, foot measure, gratuity, $1; Henry Seinbeechcer, earthen ware, gratuity, $1.

David Stiles, Charles Ingalls, Stephen Oliver—*Committee.*

FANCY WORK AND WORKS OF ART.

The Committee award as follows:

White Embroidery, A. S. Mathison, Lynn, 1st premium, $2; Mary M. Oliver, Lynn, 2d premium, $1.50; H. A. Prescott, Lynn, gratuity, 50 cts.; Flannel Embroidery, Mrs. H. D. Stimpson, Lynn, 1st premium, $1.50; Mary B. Smith, Lynn, gratuity, 50 cts.; Kensington Embroidery, Mrs. D. B. Moulton, Lynn, 1st premium, $2; Emma Gutterson, Lynn, 2d premium, $1; Machine Embroidery, G. C. Tewksbury & Co., Lynn, 1st premium, $2. Worsted Work, Mrs. Ella Holt, Lawrence, 1st premium, $1; H. H. Pease, Peabody, gratuity, 50 cts.; J. B. Harding, Lynn, 50 cts.; Mrs. A. B. Berry, do, 50 cts.; Mrs. P. Stiggins, 50 cts.; Mrs. Prentiss, 50 cts.; Mrs. Josiah George, 2d premium, 75 cts. Applique Table, A. M. Shaw, 1st premium, $1. Under Clothing, Mrs. W. H. Manning, Lynn, 1st premium, $1.50; H. Lizzie Alley, do, 2d, $1. Pen Marking, Mrs. A. P. Newhall, Lynn, 1st premium, $1.50. Hand Knitting, Mrs. M. W. Batchelder, Lynn, 1st premium, $1.25; Mrs. W. H. Pierce, do, 2d, $1; Ann Pierce, do, gratuity, 25 cts; Matilda A. McKenny, do, 25 cts.; M. Lizzie Batson, Danvers, 50 cts. Hand made Lace, Lucy A. Marshall, Lynn, 1st premium, $1.50. Paper Work, A. F. Thacker, Saugus, gratuity, 50 cts.; Lulu Sanborn, Lynn, 50 cts. Needle Book, Laura Clifford, Lynn, 1st premium, $1. Chair Cover, E. L. Filene, Lynn, 1st premium, $1. Netting and Crochet, Mrs. Elliott C. Johnson, Lynn, 1st premium, $1; Mrs. J. A. Berry, do, gratuity, 50 cts.; M. L. Walton, Peabody, 50 cts. Tatting, Susie H. Holmes, Lynn, 1st premium, $1. Oil Painting, Clerk Oliver, Lynn, gratuity, $3; Chas. Woodbury, do, $2; C. K. Clark, do, $1; Miss Abby Barry, do, $2; S. B.

Stewart, do, $2; J. H. Haskins, do, 1; Miss K. Moulton, do, $1; C. H. P. Roney, do, $1; Wm. A. Burrill, do, $1; Ida L. Moore, do, $2; C. M. Allen, do, $1. Water Color, Sidney Guild, Lynn, $2; do, Miss Kelly, do, $1. China painting, Ida M. Pierce, Lynn; Miss Nutting, do; Mrs. Humphry, do, 75 cts. each. Miss Crossman, Lynn, C. H. Howland, do; Augusta Bacheller, 50 cts. each. Crayon, N. L. Berry, Lynn, $1; Jos. C. Lewis, do, 75 cents. Pastel, C. H. Goodridge, Lynn; clock, Chas. E. Bacheller, do; feather flowers, Mrs. A. M. Watson, do; butterflies, Alfred Cook, do; fret work, Henry K. Merritt, do; crayon, Wm. P. Haseltine, do; Mrs. J. Clark, Lawrence; Miss Jean Oliver, 50 cts. each.

Mrs. R. E. Harmon, Mrs. A. P. Clark, Mrs. J. O. Guild, S. A. Barton—*Committee.*

CHILDREN'S WORK.

The Committee report to:

Butterflies, Henry N. Berry, Lynn, 1st premium, $3; row boat, Henry D. Floyd, do, 2d, $2; two Swiss clocks, Arthur F. Foster, gratuity, $1.50; book drawings, Arthur B. Fuller, Middleton, $1.50; quilt, Eva Batchelder, Wenham, $1; oil painting, Geo. M. Newhall, Lynn, $1; match safe, Amandin P. Spiller, do, 50 cts.; motto, Alice V. N. Herne, Beverly; Lulu L. Searles, Lynn, 50 cts. each; painted plate, Georgie F. Perley, 50 cts.

Mrs. S. B. Shorey, Mrs. H. H. Proctor, L. M. Austin, Lizzie Harvey—*Committee.*

FARMS.

The Committee on Farms respectfully report that the farm of Mr. Charles W. Mann, of Methuen, is the only one entered for the premium. Mr. F. S. C. Herrick, also of Methuen, entered his farm for inspection.

The 25th of September was appointed for visiting them by the Committee, and a part of the committee attended to that duty.

Mr. Mann is now but twenty years old, and, when a mere boy, was compelled by circumstances to take the charge of, and perform the labor of a farm of ten acres. Being left an orphan at an early age he was taken into the family of his grandmother and aunt, whose farm he has conducted by his own labor. It is naturally good land, but was entirely run down and neglected when he commenced. Although a mere boy, he has exercised the perseverance, industry and good judgment of a man, in the management of the farm, and as will be shown in his statement accompanying this report, has increased his stock from a single horse and a few hens to two horses, seven cows, two heifers, one hog, two shoats, and a large flock of poultry, built a very conveniently arranged barn, (28 by 36 feet), with a well built cellar under the whole ; has underdrained and reclaimed one acre of wet meadow, brought the whole into a good state of cultivation, and supported the family, of four persons. All was the result of his own labor on ten acres of land.

His sales are of market vegetables, apples, milk and poultry. It is perhaps unnecessary to add, for his works are evidence, that Mr. Mann does not use intoxicating drinks or tobacco in any form, and attends strictly to his business.

Although the committee feel that Mr. Mann has done remarkably well, and desire to give him proper encouragement, they do not consider his farm (in the language of the society's offer of the premium), "the best conducted and most improved farm," but think that he is entitled to a gratuity of fifteen dollars, and recommend that it be awarded him.

Mr. Herrick, after graduating from the Massachusetts Agricultural College, seven years ago, took possession of seventeen acres of land, upon which was a small one story house of but little value. This small farm was principally composed of rough stony land, which had never been cultivated, with boulders cropping out all over it and bushes and some wood growing on it.

A part of the farm was a wet swamp, of no use in the condition in which it was at that time. A small portion of the farm had been partially cultivated, or, perhaps more properly described, skinned, yielding annually five or six tons of hay.

This farm was given to Mr. Herrick by his father, as it seemed to the committee, for the purpose of testing the quality of the stuff his son was made of, and also to see if the Massachusetts Agricultural College was educating its students away from the farm, or whether they were acquiring a knowledge of practical and scientific agriculture, by which a young graduate, with no other opportunity of learning farming, could get a living and make himself a home on seventeen acres of land, the most of which was in the condition of thousands of acres in Massachusetts, commonly called waste land. Surely the test was about as severe as could well be selected for the purpose.

Young Herrick went to work with a stout heart, perseverance and industry ; first, to thoroughly underdrain and bring under cultivation the swamp, in accordance with the principles and practice learned at the college ; and now it has the appearance of a beautiful lawn, and being near the dwelling, is a fit accompaniment of a tasteful home, besides yielding two heavy crops of hay yearly. He then began on the rough rocky portion nearest home (on an acre or two at a time), cutting the bushes and trees, digging up the stumps and boulders, blasting those that were too large to move, and picking stones.

He used the rocks thus obtained in building a barn cellar wall, and also a very substantial and ornamental faced wall along one side of his farm, which was in the form of a parallelogram, first digging a deep trench, the gravel from which served to gravel a road alongside of the wall. The surface soil from the road bed was first thrown out for composting purposes, and both the trench for the wall and the road bed filled with the stones gathered from the adjoining land, in process of being cleared. In this way he has carried along together, the clearing of the land, the building of a very sub-

stantial faced wall that is highly ornamental, and also a permanent farm road, with stones and waste rock at the bottom and gravelled on the surface, thus making it a hard, dry road at all seasons, and durable for all time.

When a lot has been cleared sufficiently for the plow, he has thoroughly cultivated and fertilized it with either chemical or barn manure, fitted the land for any garden vegetable or root crop, and then laid it down to grass in first class condition. In this way he has gone over about three-fourths of his farm.

The Committee had an opportunity to see different sections of land in the various processes described above, so that they can judge of the great amount of labor that has been bestowed to bring about these satisfactory results. But it will be asked, can it be afforded to bestow so much labor on such rough land to bring it into a condition of cultivation? "Does it pay?" is the question that farmers desire to have answered.

Mr. Herrick hired money to build a very nice barn and suitable outbuildings, such as sheds, tool house, &c., to accommodate the farm stock and produce. They are clapboarded and painted in good shape. He has also built an addition to the original one story house, which now forms an attachment to the main and new part, the whole making a very convenient and tasteful residence for his growing family, which doubtless he had in view at the start, and which gave him courage and persistence in his labor.

He has grown hay, corn, market vegetables, and milk, which he sells directly to the consumers in Lawrence, one and a half miles distant. With the products of the farm, he has supported his family, made his farm, so far as he has gone, a beautiful feature in the landscape, and paid up all the debts contracted for building purposes. And all in seven years.

The Committee are of the opinion that the question whether it pays to farm on even such land as he started with, is answered in the affimative; and also the question as to the character of the work of the Agricultural College, and the influence it exerts upon its graduates. We beg to differ from Horace Greeley

when he said, "young man, go West," but would say to our young men, you can do better at home, and enjoy the privileges of our social and educational institutions, by following the example here set before you.

It is proper to state that being located near the House of Correction at Lawrence, Mr. Herrick has improved the opportunity of employing convict labor, in part, at contractors' prices (twenty cents per day), which all responsible parties may do if they choose. This kind of labor has some advantages as to the cost of labor, but at the same time disadvantages and inconveniences that would deter many from adopting it.

The Committee desire to call attention to the fact developed by the result of the efforts of Messrs. Herrick and Mann, that a young man need not go outside of Essex county to secure a good living, and become a thrifty head of a family, on a small farm of ten or twenty acres of the average quality of land, by using good judgment, economy, and the exercise of industrious and temperate habits.

BENJAMIN P. WARE, *Chairman of Committee.*

STATEMENT OF CHARLES W. MANN.

GENTLEMEN :—The farm which I enter for premium is situated in the easterly part of Methuen, and consists of ten acres, about eight and a half of good upland, and one and a half low meadow. There is an apple orchard of seventy trees, from twenty to thirty years old.

In 1872, when I was twelve years old, I commenced taking care of the hens, and that year raised 174 dozen eggs. The next year the hen fever did not run very high with me, and I had only 146 dozen eggs, but after that it set in stronger, and in 1874 I had 457 dozen ; in 1875 it increased to 766 dozen, and reached the crisis in 1876, when my whole production was 1587 dozen, and my sales of eggs and poultry footed up $513.85. During this time I had nearly all the leading varieties and sold a few eggs at fancy prices, but my business was

mostly poultry and eggs for market, and although I had it all to learn and met with some *heavy losses*, my books show that I made a fair profit.

For several years previous to this the little farm had been very much neglected and was getting pretty badly run down, but the manure from my hens and the horse (all the stock we kept), soon made an improvement on a small portion of it. In 1876, the sales from the farm were $152.33 for apples and vegetables and $57 for standing grass. The barn at this time was a low shed, 18x30 feet, intended to be room enough for a cow and horse, and hay to keep them over winter.

In 1877 my stock was the horse and hens. My sales were poultry and eggs, $508.78, reducing my stock somewhat, as I had only 821 dozen eggs; fruit and vegetables, $106.42, and standing grass, $30. I kept enough of the hay to winter a cow, and about the first of November bought one which gave me in November and December, 647 quarts of milk, of which I sold 590 quarts for $25.08. I paid out this year for labor $76.29.

In 1878, I had reduced my poultry stock down to a production of 208 dozen eggs, and in October increased my neat stock by the purchase of four cows. I made all the hay on the place and stored in a neighbor's barn, fixed up a warm corner in the wagon shed for the horse and put in stanchions all across the end of the little barn to tie up my five cows. I filled the rest of it with hay except a passage way about three feet wide in front of the cows, which was nearly all taken up by the hay cutter and food box. It was very snug work and inconvenient, but not unpleasant to think of now that it is past. The sales this year amounted to $177.08, of which $72.74 was for milk sold to the milkman at the farm.

In 1879, I kept five cows and soiled them on the place through the summer, and cut hay enough to keep them through the winter. In June a new and convenient barn was built. It is 28x36 feet, with cellar; has room for six cows and two horses, storage for twenty tons of hay, grain room, harness

and tool room, &c. The cows gave me 12,525 qts. of milk, of which 11,786 qts. were sold for $370. Sales from all other sources, $161.30. Barn building left but little time for raising vegetables.

At the beginning of this year, 1880, my stock consisted of six cows, two horses, one breeding sow, and forty hens. The sales to date, Oct. 10th, have been 42,034 qts. of milk, $102.05; fruit, vegetables, &c., $131.03. I am now selling my crops as they come in and my total sales for the year will doubtless be $1000. I have on hand, 130 bbls. picked apples, 70 dozen Celery, 5 tons Mangels, ½ acre of Cabbage, 50 bu. Round Turnips, 5 tons squashes, 10 bushels Potatoes, 12 tons Hay and Oats, (100 bushels Dandelions for next Spring's sales). I have this season pastured my cows four months, an experiment I shall not repeat; their total product has been 12,884 qts. of milk in 9 mos. and ten days. My stock now is seven cows, two heifers, two horses, one hog, two shoats, twenty hens, and one hundred chickens.

This year we have reclaimed an acre of the meadow by getting out the stone, under draining and seeding down to grass. Work was begun on it two years ago, but last year it was so wet that we only succeeded in plowing it roughly once and getting a few potatoes off of the dryest corner of it. It has not produced the value of a ton of hay for ten years, but promises now to do better in the future.

I have made no account of the labor I have hired as it has been more than balanced by what I have earned with my team, in working off of the place until this year there is a balance against me of $22.00.

Thirty-five dollars will cover the cost of all the manure I have bought, except a small stable which I exchanged hay for. I have drawn a great many loads of muck and sand to mix with the manure, but it has cost nothing but the labor.

No account has been made of milk, eggs, poultry, pork, fruit or vegetables, used by a family of four. We have had a

good garden every year, helped ourselves liberally to the best, and if any was left over we sold it or gave it away.

Yours respectfully,

CHAS. W. MANN.

WET MEADOW AND SWAMP LANDS.

The committee on improving wet meadow lands was composed of the following gentlemen: David Stiles, chairman; W. C. Sleeper, Methuen, John N. Kent, Newbury, John W. Blodgett, Saugus, and John L. Colcord, Peabody. The two latter with your chairman were present to view the land of Mr. Alfred Green of Salisbury, June 28th, 1880.

The day was one of the hottest and dryest of the season. We found ourselves after leaving the cars in Newburyport and riding about three miles over a dusty road passing the chain bridge, in a valley on the left bank of the Merrimack. At the lower end of this valley was the land we came to view. The plot contained considerably over an acre as we judged, and had then upon it, in our opinion, about three tons of herds grass to the acre.

Mr. Green was with us and gave a verbal statement for 1880, which was, that the land had received no dressing since the first year, or three years ago, and his former statements we had no reason to doubt, in fact, we thought that he fell below the fact in his estimate of the two former hay crops, as he said they were about the same as the present one.

The soil is a mixture of clay, sand, and fine gravel (we should judge) which for ages had been flowed by the backing of the water from the Merrimack by the tide. The water at this point of the river is salt or fresh, depending upon the high tides or freshets. And certainly a large amount of salt, together with refuse matter from the ocean and river must have been deposited upon this land. What influence they have had, your committee are unable to say. It is a remarka-

ble fact that 4 bbls. of ground bone costing only $20.70 should produce three such heavy crops of hay.

Without any hesitation you committee recommend the award of the first premium of $15. to Mr. Green.

For the encouragement of those owning lands adjoining, of the same kind of which there are hundreds of acres, the committee expressed an opinion that these lands could be diked and made the most productive of any in the county. Mr. W. H. B. Currier, editor of the Villager, is of the same opinion, and has so expressed his views in his paper in times past. Mr. Currier expressed much satisfaction that your committee had taken notice of this experiment in that part of the county and hoped it would stimulate others to do something for the agricultural cause.

We have also examined the land entered for premium by J. J. H. Gregory, and at first thought it would come under the head of reclaimed *waste* or *pasture* lands, rather than *wet meadow* or swamp, but as this land was drained (having an excess of water) we concluded to call it *waste swamp*.

Your chairman has known this land more than forty years and at no time, till owned by Mr. Gregory, have we seen upon it a crop hardly worth gathering, although it has been in the possession of one or more of our best farmers.

The land is situated in front of where once stood the house of Deacon Edward Putnam of witchcraft notoriety and was owned by him. From 1692 till in possession of the present owner, we doubt if any of its numerous possessors have ever realized much profit from it.

The committee met November 3d, which was thought to be rather late in the season, the most favorable time being while the crop is standing, but the stubble indicated all that Mr. Gregory claims for it. Those of the committee present were William C. Sleeper, Methuen, John L. Colcord, Peabody, and David Stiles, Middleton, who unanimously recommended the, second premium of ten dollars.

Mr. Gregory's statement came to hand Oct. 28th, 1880.

DAVID STILES, *Chairman.*

STATEMENT OF ALFRED GREEN OF SALISBURY.

I wish to be considered a claimant for the premium offered by the society for "Improving wet meadow and Swamp Land," and offer the following statement:

In the Fall of 1876, I had one acre of Swamp land, which was so covered with bunch hassocks as to be useless and unproductive. I first built a dam across a narrow neck of the land, putting in a tide gate so as to prevent flowage from the water of the Merrimac river, which entered a creek about twenty rods distant. I then cut out all the hassocks with a bog adz, using the hassocks to fill in about my dam; ploughed the land, put in one underdrain; bedded the land into three beds, leaving open drains between each two beds; harrowed and sowed the land with herds grass and red-top seed. Before harrowing spread four barrels of ground bone over the soil.

From this reclaimed land I have cut two tons of good hay per acre for two years in succession, besides a ton and one-half at the second crop, making seven tons of hay since reclaiming the land.

I present the following as a statement in full of the account:

	Dr.
Four barrels of ground bone used,	$20.70
Ploughing land and rolling,	7.45
Grass Seed,	1.80
Labor of leveling, harrowing and sowing seed,	4.50
Cost of gathering hay crop,	11.25
	$45.70

1877	Cr.	
Two tons of hay at $20 per ton (1st crop),	$40.00	
One and one-half tons (rowen) 2d crop,	27.00	
	67.00	
To labor, bone dust, &c.,	45.70	
Profit of land first year,	$21.30	

1878	Cr.
Two tons of hay (1st crop),	$32.00
1½ tons (one and one-half tons rowen),	28.00
	$60.00
Cost of gathering hay crop,	11.25
	48.75
Add profit on crop of 1877,	21.30
And profit of land reclaimed is	$70.05

Last Fall I seeded down a second acre of swamp land adjoining the above, which was really in worse condition originally than the first lot, which I will place beside any lot of reclaimed land in Essex county. Beneath the surface of this swamp land, I dug out many stumps of trees and partially decayed trunks of swamp maples and swamp oaks.

The land in both instances was so wet that it could only be ploughed at the very dryest season, and not until the water, which permeated the whole surface, had been drained off through the drains. As a result, I have now one of the best lots of grass land in this section, the land resembling the bottom lands of the West in depth of soil and fertility.

STATEMENT OF J. J. H. GREGORY.

The piece of Improved Wet Meadow I enter for premium is located on my farm in Danvers, just over the border of Middleton. It comprises between three and four acres, situated in about the middle of a tillage field of eighteen acres. When taken in hand, this tract of four acres or thereabouts was a meadow of thin, coarse, natural grass, with cranberry vinns scattered here and there. The hay did not pay for the cutting and hence it was not always mowed, while the cranberry vines yielded next to nothing. A shallow broad ditch ran through the middle of it, and on the bank of earth thrown out in the digging of it grew a row of willow trees, from one to three feet in diameter, evidently planted there with the idea that the

land was but a waste and that was about the only way of utilizing it.

On examining this tract there did not appear sufficient cause why it should be allowed to run to waste: I accordingly took it in hand, first cutting down and rooting out the willows, and then removing for use in compost heaps the bank of earth upon which they grew. I next had the old ditch deepened, after tapping by a small tiled drain a single spot which in the spring of the year looked wet; believing that the wetness of the tract was caused almost solely by surface water from the high hill tract on which the Hospital is located, I had my men dig a short ditch just outside the wall of the field, to catch the surface water as it ran down the hill and turn it into a brook which ran through another part of this eighteen acre tract.

The land was now ploughed with a large plow drawn by two yoke of oxen. It was turned to the depth of ten inches, to which depth the soil had the black color, common to low, wet land, and beneath this we found clay and sand, in the form of a moderately hard hard-pan. A glue compost, about seven cords to the acre, was spread on the surface, worked in, and the common mixture of grass seed sown. In 1879 we had our first crop of hay, which was a ton and three-fourths per acre, for the first crop, and nearly two tons per acre, for the second crop. The past season the first crop was a ton and a half, and the second over a ton per acre. The improvements made being permanent ones, I charge but six per cent. of the outlay in this direction against the crops of the two past seasons.

I consider the great value of the experiment to be a lesson to all us farmers, to use a common saying, "not to be scared before we are hurt." In all probability, for a century or more, this tract of land had been classified as waste, on the *assumption* that it could not be made sufficiently dry for tillage, whereas an outlay of about forty dollars has added to its value, at the lowest, seventy-five dollars per acre.

The profits of the investment, as shown by the two years'

crops, is a superficial one in all probability, for it will soon be growing cabbage and onions, when the profits will be increased several fold.

It will be seen that in estimating the expenses I have charged but two-thirds the cost of the glue manure; this is a very lasting manure, especially in wet land. I have also charged but one-half the cost of seeding and laying down, because it is obvious that the land will not need further attention in either of these respects for at least four years. In estimating the value of the hay I have made it $12 per ton, after cost of cutting and making is deducted, because in our day the cheaper processes of making by mowing machine, hay tedder and horse rake has increased the value of the raw material.

Expense of removing Willows,	$20.00
" of deepening main ditch,	6.00
" of digging and tiling lateral,	9.00
Cost of tiles,	8.00
Digging intercepting ditch,	2.50
Cost of permanent improvements,	$45.50

Experiment.	Dr.
To Interest on Permanent Improvement,	$5.46
To ploughing 3½ acres (½ charged),	8.75
To 21½ cords manure (2-3 charged),	81.70
To Harrowing and rolling, (½ charged),	2.00
To grass seed (½ charged),	7.00
To interest on land,	15.00
Total,	$119.91

Experiment.	Cr.
By 12½ tons of hay,	$147.00
By 8 3-4 tons of hay,	105.00
	252.00
Deduct cost,	119.91
Profit,	$132.09

GRAIN CROPS.

The Committee on Grain Crops, report nine entries classified as follows: Rye five, by Geo. H. Creamer of Hamilton, F. H. Lyford of Salem, John W. Blodgett of Saugus, Hospital for Insane, Danvers, and Charles C. Blunt, of Andover. Indian Corn three, by Major Ben: Perley Poore of West Newbury, Charles W. Adams of Newbury, and Augustine Stone of Ipswich. English Hay one, by George W. Adams of Newbury, (Byfield). The Committee met on the 28th of June, at Mr. Creamer's; and sadly regretted the absence of its most important members, otherwise, the observations and reflections might have afforded matter sufficient for the report. However the "Committee" after viewing a fine piece of rye, proceeded on its tour of inspection, visiting Mr. Lyford at "Kernwood," a portion of whose crop of rye we considered the best entered, but as there was only seven-eighths of an acre, it did not come within the rules of the society. Passing on, we next paid our respects to Mr. Blodgett, where amid his multitudinous crops and general activity everything bespoke the practical farmer on whom the prosperity of the state really depends; his fifteen acres of rye we considered as a whole the best examined. After being hospitably entertained for the night we took our leave for the Hospital, where we were taken up into a high mountain and had Old Essex County at our feet and an excellent piece of rye at our hand, most remarkable for its production of green crops in 1879. Leaving many things of interest, we departed for Mr. Blunt's, and again saw an excellent crop of rye. Having completed our round and received that attention which made all our visits most agreeable, we turned our faces down through the fine farms of North Andover and the ponds of Boxford to our own humble home. In July, two of the Committee visited Mr. G. W. Adams and viewed his crop of English grass.

On the 30th of September, the Committee, which was well represented, met at Major Poore's, Indian Hill, and they

trust that amid reminiscence, anecdote and objects of interest, they did not wholly neglect their duties, for they climbed to the top of Indian Hill and viewed a finer piece of Indian Corn than farmers often see. They then proceeded to Mr. Adams', and saw his crop of corn and pronounced it good, especially the kind, the ear holding its size remarkably to the tip.

Early in October, two of the Committee visited Mr. Stone, and were shown a field of corn of seven acres, of excellent yield and quality and clean cultivation.

For the essentials in the report, the details of method in the cultivation of the crops, reference is had to the several statements annexed.

We award to John W. Blodgett of Saugus, for his crop of rye, the first premium of $10.00.

We award to Chas. W. Adams of Newbury, for his crop of corn, the premium of $10.00.

We recommend the premium of $8.00 to George W. Adams of Newbury, (Byfield), for his crop of English Hay.

Respectfully submitted,

NATHANIEL LITTLE, *for the Committee.*

STATEMENT OF J. W. BLODGETT.

The land on which this rye was raised contains one and a quarter acres, and the soil is a sandy loam. For a number of years previous to 1878, it had been to grass and received no manure. The crop of 1878 was potatoes, manured with six cords stable manure to the acre. Crop of 1879 was cabbages, manured with eight cords stable manure and marsh mud composted to the acre. It was sowed to winter rye without manure in October, 1879, two bushels to the acre; harvested July 8th to July 13th, 1880.

	Dr.
To use of land,	$12.00
To ploughing and harrowing,	5.00
To Sowing and rolling,	2.00
To mowing and binding,	5.00

To storing,	4.00
To threshing,	6.30
To teaming straw and rye,	6.50
Profit,	54.10
	$94.90

	Cr.
By 5620 lbs. straw,	56.20
By 43 bushels rye,	38.70
	$94.90

This certifies that a lot of land on which J. W. Blodgett had rye this season contains one acre and one quarter.

East Saugus, Aug. 14, 1880. GEO. H. PEARSON.

This certifies that the rye grown on one and a quarter acres of land, by J. W. Blodgett this season, weighs 2408 lbs. (or forty-three bushels).

East Saugus, Aug. 14, 1880. GEO. F. MARSHALL.

STATEMENT OF S. S. PRATT, FOR DANVERS HOSPITAL.

The crop of Rye entered for premium by the hospital for Insane, Danvers, S. S. Pratt, farmer, grew on one acre of land, on which stands 28 apple and pear trees of medium size. The crop of 1878 was potatoes, about 7 cords of stable manure being used. The crop of 1879 was peas, on which was used five cords of barn manure, the soil being of a dark, heavy loam, with gravelly clay subsoil, and was ploughed once for the rye crop; no other preparation for the seed. Cost of ploughing, $4.00. No manure was applied to this crop, one and three-fourths bushel of seed was sowed in the usual way. Cost of seed and sowing, $2.25. Harrowing and rolling, $3. Sowed Aug. 7th; it attained rank growth in October, 1879, when it was cut as green food for milch cows. The amount from the lot is estimated at 12 tons green fodder, valued at

$2.00 per ton, or $24 for the lot. The rye was harvested July 6, 1880; cut with scythe and put in bundles.

Amount of Grain, 39 bush. at $1 per bu.,	$39.00
5000 lbs. Straw, at $1 per hundred,	50.00
Green crop for soiling,	24.00
Total Credit,	$113.00
Ploughing,	$4.00
Seed and sowing,	2.25
Harvesting and Teaming,	8.00
Harrowing and rolling,	3.00
Threshing and winnowing,	9.75
Interest,	6.00
Total,	$33.00
Profit,	80.00

It is considered that the trees growing on the land considerably damaged the crop.

STATEMENT OF CHAS. C. BLUNT.

The soil is a gravelly loam with a gravelly subsoil. The crop of 1878 was Hungarian grass without manure. After the Hungarian was cut it was ploughed eight inches deep and laid until the next spring. In 1879, it was again ploughed 10 inches deep, and 8 cords of manure to the acre spread, and planted to potatoes, manure valued at $4.50 per cord; after the potatoes were harvested it was harrowed without being ploughed again, and 400 lbs. of Russell Coe's Superphosphate applied. Cost, $8.00

Sowing and harrowing,	.75
One and one-half bushels of rye,	1.50
Mowing and Harvesting,	3.00
Threshing and cleaning,	2.50
	$15.75

Cr. by 4470 lbs. Rye Straw, at $1.25 per 100,	$55.87½
By 26¾ bush. Rye, at $1.05 per bushel,	28.08½
	83.96
Deduct cost,	15.75
Profit of crop,	$68.21

The Rye was sowed the 10th of October, 1879, and harvested the 10th of July, 1880.

I hereby certify that I measured one acre of Rye ground for Chas. C. Blunt, July 5th, 1880.

GEORGE GUTTERSON.

I hereby certify that I measured the Rye grown on the above mentioned acre of ground and it measured 26¾ bushels, 60 lbs. to the bushel. E. A. HORTON.

STATEMENT OF CHAS. W. ADAMS.

Having estimated my crop of corn on one acre of land, which I entered for a premium, I make the following report:—

The soil is rather a heavy loam. The ploughing was seven inches deep, at a cost of $4.00; had not been ploughed before for 15 years. It was *very thoroughly* harrowed with two harrows at once,—a large iron tooth harrow was hitched to a Randall harrow, and in this manner the ground was harrowed most of the day. Cost of harrowing, $4.00. Cultivated and hoed once only, at a cost of $4.00. It was quite free from weeds.

I put the manure in the hills, using two and one-half cords. It consisted of cow manure and thatch, well rotted down. Cost of manure $15, on the ground; cost of seed and planting, $5.00; harvesting, $10.00.

We estimated the amount of crop from what we considered average selections, viz.:—one outside row, a row in the middle and a row from each end, and having shelled and weighed these selections, and allowing 70 lbs. of unshelled corn to the

bushel, we had 95 bushels to the acre, at 75 cents per bushel, $71.25. Of the top stalks and butts, there was the usual amount which we didn't weigh. "Reports" vary in their estimates of them. Some estimate the value of theirs, on an acre, as high as $60. We should be glad to get $30 for ours.

Cost of ploughing,	$4.00
Cost of harrowing,	4 00
Cost of manure,	15.00
Seed and planting,	5.00
Cultivating and hoeing,	4.00
Harvesting,	10.00
	$42.00
Value of corn,	$71.25
Value of stalks,	30.00
	101.25
Cost,	42.00
Profit,	$59.25

This certifies that I surveyed the acre of land on which the above crop was grown. PHILIP D. ADAMS.

I hereby certify that I selected the corn as above stated, shelled, and weighed the same. JACOB D. RAY.

STATEMENT OF BEN: PERLEY POORE.

The crop of corn entered by me for premium was raised on four acres of nearly level land, on the top of Indian Hill, in West Newbury. The soil is a gravelly loam, and water is found about twenty feet below the surface, although that is nearly two hundred feet above the level of the nearest running stream. I am convinced that planting the sides of the hill (too steep for cultivation), with forest trees, has retained much moisture that would otherwise have been evaporated. The area on the top of the hill was used as a drill-ground for sev-

eral years before the war, and when it was cultivated and laid down to grass in 1864, there was so much white weed seed in the manure used that the grass was soon crowded out by that troublesome weed.

In the fall of 1879, the land was ploughed nine inches deep, and eighty small cart-loads of manure were hauled up from the barn yard and deposited in heaps. In the spring this manure was evenly scattered over the ground, which was then harrowed and cross-harrowed with a Randall harrow. It was then marked off into rows four feet apart each way; eight hundred pounds of Bowker's "hill and drill phosphate" was then put into the cross checks, when a little earth was thrown on it, and on that the corn was planted. It was of an improved King Philip variety, with a long ear and a very small cob; 412 pounds of corn in the ear weighed, after having been shelled, 342 pounds.

The crop was hoed twice. The stalks were cut in September, and the corn was harvested late in October. A careful estimate shows that the four acres produced two hundred and ninety bushels of shelled corn, weighing fifty-six pounds to the bushel—making over seventy-two bushels to the acre. The stover was unusually abundant, and as it was housed in good order, its value for fodder more than repaid the cost of harvesting and husking.

At first, I was disappointed in the result of this crop. I had read of crops of corn in Essex county when it was said that upwards of one hundred bushels to the acre had been raised, and I had hoped to equal them; but I became satisfied that I had no reason to complain. Others may perhaps raise a hundred bushels of shelled corn to the acre, but I cannot, and I shall be contented with a crop of seventy bushels, obtained by the use of plenty of manure and good cultivation.

West Newbury, Nov. 1, 1880.

The above statements are correct.

S. R. Baily, *Foreman of Indian Hill Farm.*

STATEMENT OF AUGUSTINE STONE.

The crop of 1878 was grass, also 1879. The size of the piece of land is about seven acres, one acre of which I had measured. The manure used was stable or barn yard manure. The nature of the soil, clay loam; broken up the last Spring; ploughed about 8 to 9 inches deep; rolled once over the furrows, then harrowed twice, once each way; then furrowed each way; manure put out in the hill. Manure for the whole piece 24 cords, or about $3\frac{1}{4}$ cords to the acre. Planted the second week of May. The amount of seed was a bushel and three pecks; thoroughly hoed once; then went through with the cultivator twice, once each way; then chopped the weeds in the month of August.

From the measured acre I have harvested 162 bushels of sound corn, and one bushel of ears I have saved for seed and about four bushels of small corn. Weighed one basket holding 2 bushels, weighed 73 lbs. per basket. Therefore at 70 lbs. to the bushel I have a little over 80 bushels of shelled corn to the acre. I can safely say my yield of corn is 65 bushels of sound shelled corn to the acre on seven acres.

STATEMENT OF GEO. W. ADAMS.

The crop of Grass I offer for your consideration was raised on one acre of land, that received ten cords of barn yard manure in the spring of 1878 and was then laid down to grass with barley, having been in corn and potatoes two years.

The cost of grass seed was $3.82; sowing the same with the barley, 50 cts.; ploughing and harrowing, $6.00.

The crop of barley was very small, worth perhaps $14.00, straw and grain. The grass of 1879 was coarser, taller, and I should think of greater weight than this year. The land has been in no way enriched since 1878.

The cost of harvesting this season was,—mowing, $1.00; other labor, say $4.50. The grass was very dry when cut, a large part of the red top having fallen.

The land was measured by Mr. Gardner P. Balch, whose statement I enclose.

Byfield, July 12, 1880.

I hereby certify that I measured the piece of land entered for premium on grass by Geo. W. Adams, and that it contains one acre. G. P. Balch.

This certifies that the above hay measured 1417 cubic feet in the mow, about the middle of September.

H. F. Longfellow.

ROOT CROPS.

The Committee are pleased to report a larger number of root crops entered for the premiums offered, than usual, representing the following towns:

Newbury, 5; Andover, 2; Saugus, 3; Middleton, 2; Manchester, Essex, and Topsfield, one each.

The first visited by the Committee were those entered from Newbury, viz., a piece of Potatoes and one of Squashes, by James B. Knight, one of Potatoes by Paul T. Winkley, one of Cabbage by Paul T. Winkley, Jr., one of Onions by Justin Noyes.

The Committee found that Mr. Knights' Potatoes were not as good as he has had the good fortune to enter for the last two years, they having suffered badly from the drought, but still promised a fair crop.

His Squash crop was a new and untried experiment with him, being planted late in the season, the 25th of June, to follow as a second crop after the potatoes, already partly grown.

They were planted by sticking two seeds in the sides of the potatoe hills 10 feet apart.

The variety planted was "Low's New Hybrid," which, from its vigorous and rapid growth appears to be specially adapted for late planting, or to follow as a second crop.

It seems from Mr. Knights' statement, that he has produced a very heavy crop, at an exceedingly small expense.

The only expense charged to the Squashes being $3.00 for the seed, one hour's labor in sticking the seeds in the sides of the potatoe hills 15 cts., and two hour's labor in pulling weeds after the potatoes were dug 30 cts., and $5.00 for harvesting the crop, making the whole amount charged to the squashes only $8.45.

As the crop was a very large one, more than 11 tons on 3-4 of an acre of land, it brings the expense of raising at less than $1.00 per ton.

We think Mr. Knight should have charged one half of the manure applied, to the squashes.

The piece of potatoes of Mr. Winkley was looking very well, having apparently not suffered with the drought. The variety being a late one, the vines were still green and strong, promising a large yield. From Mr. Winkley's statement, the yield was not as large as the Committee expected it would be, being 283 bushels from 1 acre and 5 rods of land.

The price of Cabbages entered by Mr. Winkley's son was not far advanced enough for the Committee to judge of the yield, but were thrifty and growing well. From Mr. Winkley's statement, the piece produced 1700 good heads.

The crop of Onions of Mr. Noyes, was very good for this year, as the season has been very unfavorable. They were growing upon the same piece of land on which he raised his premium crop last year, but were much smaller in size than he has usually grown, and have not measured out as well as he expected.

The next crops visited were those of J. W. Blodgett, of Saugus, who entered a crop of Hubbard Squashes, one of Turnip Beets, one of Carrots, and one of English Turnips. The first three were in the same field, growing side by side. The Squashes were of good size, well ripened and pure stock.

The crop of Turnip Beets was very handsome, with but very few breaks in the rows; the beets of uniform size, smooth, and good shape and color.

The piece of Carrots appeared to be a very heavy crop, but Mr. Blodgett reports, that on measuring the land it fell short a few rods of half an acre necessary for a premium.

The crop of English Turnips was very fine and were still in the full vigor of growth.

The next crops in order were those of Daniel Carleton, of No. Andover, who entered a piece of Cabbages and one of Onions. His crop of Cabbages was very good, although the heads were not of very large size, but from Mr. Carleton's statement are better for his trade than larger heads would be. The onion crop was a good one. They were of good market size, well ripened and free from scullions.

The next entries were those of J. J. H. Gregory, of Marblehead, who entered a piece of Cabbage and one of Onions.

From the statements of Mr. Gregory his crop of Cabbages were unusually large and heavy, averaging more than 13 lbs. each, and with but very few missing hills on the piece.

His crop of Onions was very large, especially for this year, producing 404 bushels on the half an acre. The onions of large size, well ripened and handsome.

The Potatoes entered by Frederick Burnham, of Manchester, were viewed by the Committee, who found the piece to be very uniform in appearance, the vines stout and strong. The variety was the Early Rose, and yielded on 98 rods 216 bushels;—the largest yield of any crop entered.

The piece of Mangle Wurtzels entered by Aaron Knowlton, of Essex, was next visited by two of the Committee. The ground was well covered with the beets, though they were not as large as they sometimes grew.

The yield was good, as by the statement there was 33 tons and 625 lbs. on a little more than half an acre.

The last crop entered was a piece of Ruta Baga Turnips, by James Manning of Topsfield.

They were viewed by the Committee and were thought well worthy of a premium, but as Mr. Manning's statement was not received in season, the premium was not awarded.

The Committee having examined the several statements of crops entered for premiums have awarded

To James B. Knight of Newbury, for the best crop of Squashes, the Premium of $10.00.

To J. J. H. Gregory of Marblehead for best crop of Onions, the premium of $10.00. Also for best crop of cabbages, the premium of $10.00.

To Frederick Burnham of Manchester, for the best crop of potatoes, the premium of $10.00.

To James W. Blodgett of Saugus, for the best crop of turnip beets, the premium of $10 00. Also for the best crop of English turnips, the premium of $10.00.

To Aaron Knowlton of Essex, for the best crop of mangle wurtzel the premium of $10.00.

In examining the statements of the several competitors for the premiums offered by the society, the committee regret that there should be so little inclination, (with one or two exceptions) to step out of the old methods, followed for years without any variations, as to the manner of manuring, seeding, after cultivation, etc.

Every intelligent farmer knows that it is absolutely necessary for him to follow, in a measure, a system of rotation, as to his crops, and would think himself very unwise if he should plant year after year, on the same piece of land, such crops as cabbages, turnips and many other kinds of vegetables, as he well knows that the result would be failures. But, does he ever ask himself the question: if a system of rotation in the kinds of manure applied would not be as beneficial as in the kinds of crops raised. It is a well known fact, that taking a piece of land that has been heavily manured for a number of years, with stable or barn manure, and applying instead a dressing of guano, fish, or some of the concentrated fertilizers, that the product has been largely increased. No doubt the result is partly due to the elements of plant food contained in the concentrated manure, in a larger degree than in the stable or barn manures; but may it not also be in their effect on the elements already in the soil, but not available as plant food until rendered soluble by chemical action.

Every farmer should step out of the old ruts of habit, and by his own experiments inform himself, if there are not some improvements he can make in conducting his future operations in farming. The information prized the most by all is that which is acquired in our daily practice. In conducting any new experiment, if the cost is more than the product, that experiment is a failure, so far as being adapted to the wants of the mass of farmers: but, while thus unsuccessful the keen eyed and observant man, may have acquired information, that in repeating his experiment, may insure complete success, and bring the balance on the right side of the ledger. No one should be discouraged in the first time trying any new idea, although that trial may be a failure. It is only by persistence and determined effort any great inventor achieves success. So the farmer, can only by careful investigation into the causes of success, or failure, insure the first, or guard against the repetition of the other.

For the purpose of determining for my own satisfaction the comparative value of stable manure, Stockbridge and Bradley's Fertilizers for potatoes, and at the same time testing as far as one season's trial could test, the difference between seeding with one small whole potatoe, a large one cut to two eyes and planted the same distance apart in the rows. While thus conducting the above experiments a third which I have tried successfully for two years of following with a second crop of vegetables to occupy the land after the potatoes were fully grown.

The piece of land on which the experiments were conducted is rather a light loam with a very porous subsoil. It was plowed the second week in May, manured and then furrowed in rows 5 feet apart. The first 10 rows had stable manure spread and plowed in at the rate of 6 cords to the acre. Five rows were planted with small whole potatoes, and 5 with pieces of 2 eyes and both dropped 15 inches apart in the rows. The second 10 rows had Stockbridge's manure for potatoes scattered in the drills at the rate of 500 lbs. to the acre, and well mixed with the soil. The potatoes 2 eyes to a piece were dropped 15

inches apart. The third 10 rows had Bradley's Fertilizer applied in the same manner, and the same amount as the Stockbridge and seeded the same way. The whole 30 rows were planted with Clark's No. 1 Potatoe and covered as near alike as possible. The next 20 rows were manured with Stockbridge and Bradley's alternately in the rows, and well mixed with the soil before dropping the seed. The following kinds of potatoes were planted, five rows each, Bliss' Triumph, Dunmore, St. Patrick and Early Ohio. The piece was cultivated and hoed twice during the season.

On the 25th of June, seed of my new Hybrid Squash was planted in the spaces left for the purpose, eight feet apart, in every third row, where the potatoes were planted. A handful of Stockbridge for squashes was scattered in the hill and mixed with the soil, and the seed dropped and covered with moist dirt, one inch deep. Special care was taken to cover the seed with moist dirt as the soil was very dry. The seed came up quickly, and the plants grew very rapidly. The squash vines were not troubled with bugs or maggots at the roots, and grew finely throughout the season, and were hoed twice without cultivating.

The squashes were gathered the second week in October, and were estimated to be more than 10 tons to the acre.

After the squashes were gathered the potatoes were dug, and the following is the result of the experiments :

The five rows of Clark's No. 1 potatoes, on stable manure, and planted with small whole potatoes, gave 16 bushels.

The five rows of Clark's No. 1, on stable manure, planted with 2 eyes to a piece, gave 14 bushels.

The 10 rows of Clark's No. 1 on Stockbridge, planted 2 eyes to a piece, gave 27 bushels.

The 10 rows of Clark's No. 1 on Bradley's, planted 2 eyes to a piece gave 26 bushels.

The result of the 20 rows planted with 4 varieties of potatoes and manured alternately with Stockbridge and Bradley's, appears rather singular ; as the two early varieties on Brad-

ley's, gave 1 bushel more each, than on Stockbridge's and the two late varieties give 1 bushel more each to Stockbridge than to Bradley's.

The following is the number of bushels of each variety :

On Stockbridge.	*On Bradley's.*
Dunmore, 8 bushels,	Dunmore, 7 bushels,
St. Patrick, 6 "	St. Patrick, 5 "
Early Ohio, 5 "	Early Ohio, 6 "
Bliss Triumph, 4 bushels,	Bliss Triumph, 5 bushels.

The first experiment, that of testing the value of small whole potatoes against pieces of two eyes, gave two bushels in favor of the whole potatoes. I think if the season had not been so very dry, they would have done much better, as the vines looked much the best. The Stockbridge gave 3 bushels less than the manure, and Bradley's 4. The result is decidedly in favor of the fertilizer as to the cost per bushel.

The manure cost on the field $39.00 per acre, and the fertilizers $13.00, making the cost of the present crop only one-third on the fertilizer of that on the manure. Reckoning the manure half expended and the fertilizer entirely, the result is still in their favor of $6.50 per acre.

The last and third experiment of following the potatoes with a second crop was entirely satisfactory, as there were ten tons to the acre of handsome, well-ripened squashes. If we received the benefit of the squash vines keeping the weeds down, the cost of the squashes is very low. I think the last experiment is very important, as there are many kinds of vegetables that can be just as well raised as a second crop, as earlier in the season and cost much less, and leave the land in a far better condition.

AARON LOW, *for the Committee.*

STATEMENT OF J. J. H. GREGORY, NO. 1.

The crop of cabbage entered is part of a field of about an acre and a half. The crop of 1878 was potatoes manured with a good compost, six cords, (or 20 loads of 30 bushels each), ploughed in with bone and ashes in the drill, as far as

memory serves me. The crop was a good one for the season. Last year, 1879, the land was in corn and the common pea bean. The manure was about eight cords, or 26 loads of 30 bushels each, to the acre, of a compost or stable manure, rock weed and fish. This manure proved so strong that the corn (I manured that in the drill), came poorly, though the yield was heavy in proportion to the stalks; the beans (here I ploughed in the compost), were very thrifty, and cropped at the rate of thirty-six bushels to the acre. The soil is a good loam, excepting one corner, which is quite sandy.

The land for my cabbage crop was ploughed nearly eight inches deep, a compost of stable manure and halibut and liver chum, at the rate of six cords, or 20 loads of 30 bushels each, to the acre being ploughed in. After harrowing it was laid out into furrows three feet apart, and planted the first of June to Marblehead Dutch cabbage, in hills three feet apart, about half a dozen seed being dropped in each hill. On one-half of the piece a small handful of bone dust, and on the remainder a large spoonful of guano was very thoroughly stirred into each hill. We had a smart shower just after planting, which brought the seed up at once and sent the plants forward finely. The cabbage came forward so fast that, fearing they would mature too early to enable me to carry them over till spring for seed cabbage, I gave them a good degree of healthy neglect. They were cultivated and hoed but twice during their growth. The crop headed with great uniformity over the entire piece, and the heads were exceptionally large and very solid. A number of *heads* were taken and weighed, care being exercised to select such as would not be more than average in size; six weighed as follows—10, 20, 11, 14, 15, 10½, lbs.; total, 80½ lbs., average weight, 13 5-12 lbs. As these cabbages were for seed purposes, I had no sales to go by in fixing their market value. One member of the committee stated that he had been selling during the season at one cent a pound. At this valuation, there being full 4600 heads to the acre, the value of the crop in the market would have been $617.15.

Cost of producing, marketing and ploughing one acre of land for cabbage,		$4.00
Harrowing,		1.00
Furrowing,		1.50
Planting,		3.00
Six cords of manure, and spreading,		54.00
Guano and bone dust,		10.00
Applying and mixing same,		4.00
Two cultivatings,		5.00
Two hoeings,		9.00
Loading and marketing crop, (62,100 lbs.),		114.00
Seed,		2.00
Interest on land,		4.00
Total,		$211.50
Value of crop at one cent a pound for heads,	$617.15	
Cost of raising and getting to market,	211.50	
Profit,	$405.65.	

STATEMENT OF J. J. H. GREGORY, NO. 2.

The onions I enter were raised on my farm in Danvers, the farm being divided by a brook which makes the boundary between that town and Middleton. The sward was broken four years ago and has had successively, cabbages, potatoes and onions. Last year and the year previous it was in potatoes. The crop of 1878 was manured with raw glue manure, applied at the rate of eight cords to the acre, and raked into the furrrow as the land was ploughed. The season was rather a wet one and as the manure was very rank and the land was low, almost muck in composition, I anticipated a good deal of rot. To my surprise on digging the crop there were scarcely any rotten potatoes, though once or twice when I dug into them during the season, I found the tubers laying in a bed of soft mud.

I attribute the exemption from rot to the fact that there was considerable lime in the glue manure, though only the quantity

that usually comes with this manure. The next season I under-drained the moister portion of the land, and applied a strong compost, at rate of six cords per acre, of stable manure, glue manure, coarse fish refuse, and rock weed, with sufficient soil mixed in the mass to absorb the liquid. The result was a large crop of potatoes and three-fourths of the crop rotten. I attributed this to the strength given to the manure by the fish refuse. The present season, early in May, the ground was manured with a compost of rock weed, stable manure and fish, at the rate of five cords to the acre, all finely distributed by Kemp's manure spreader—an invaluable implement for all large tillage areas. The fish used in the compost was halibut chum, which differs from porgy chum in being much richer in phosphates and about proportionally poorer in nitrogen. This manure was ploughed under four or five inches deep, and after a second ploughing two hundred pounds of Lobos guano was raked in the bed and seed of the Early Red Globe onion planted, at the rate of four pounds to the acre. Just before the onion began to bottom, 250 pounds of rectified guano was raked in. The crop received the usual attention, though the soil being remarkably free from weeds, the cost in this direction was very light.

The onions were large and well ripened with small necks. All were measured as gathered and stored. The yield on the half acre, at 52 pounds to the bushel, was four hundred and four bushels. The cost of raising it was as follows :—

Ploughing twice,	$4.00
Manure and spreading of same (2½ cords),	20.00
Lobos and rectified guano, 200 to 250 lbs.,	14.00
Seed,	10.00
Sliding and weeding, three times,	12.00
Interest on land,	2.00
Gathering crop (October),	12.00
Topping,	12.00
	$86.00

Value of crop, 404 bushels at $1 a bushel,	$404.00
Deduct cost,	86.00
Profit,	$318.00

STATEMENT OF FREDERICK T. BURNHAM.

The following is the account of my Potato crop entered for premium :—

The land used for this crop previous to 1880 was in grass and had not been ploughed for sixteen years. In November, 1879, the land was ploughed. In April, 1880, stable manure was used at the rate of about seven cords to the acre, and was harrowed in with the Randall harrow. The last week in April, the land was furrowed out in drills, three and a half feet apart, about three inches deep. The seed used was the "Early Rose," large size, cut with three to five eyes in each piece, and dropped about sixteen inches apart. The land is rather low and flat; the soil is a dark loam.

The quantity of land entered is one-half acre and eighteen square rods. Finished digging and housing potatoes September 15th. The crop amounted to two hundred and sixteen bushels.

	Dr.
To seed, nine bushels large potatoes,	$5.40
To ploughing, harrowing and furrowing one day,	4.00
To planting and hoeing, eight days,	10.00
To manure, four and one-fourth cords,	30.00
To teaming and spreading manure,	4.00
To harvesting, six days,	7.50
	$60.90

	Cr.
By 189 bush. merchantable potatoes, at 75 cts.,	$141.75
By 27 bush. small potatoes, 30 cts.,	8.10
	$149.85

Profit on one-half acre and eighteen square rods, $88.95.

This certifies that I measured the land upon which the above named crop was raised, and it measured one-half acre and eighteen square rods. N. P. MELDRAM.

This certifies that I helped dig and measure the above named crop of potatoes, and the number of bushels was two hundred and sixteen. JOS. G. MEARS.

STATEMENT OF J. B. KNIGHT.

The crop of 1879 was potatoes, with twenty-five loads of barn yard manure per acre spread on and ploughed in. The first crop of 1880 was potatoes, with twenty-five loads of barn-yard manure per acre spread on and ground ploughed seven inches deep in the spring; the soil a heavy loam. The squash seed was planted the 25th of June, by putting in with the fingers two seeds in a hill, in the side of the potato hills, squash hills ten feet apart, at a cost of one hour's labor, 15 cents; quantity of seed one pound, cost, $3; the variety was Low's Premium Hybrid Squash. No other labor was applied until harvesting, but two hours' time, after the potatoes were harvested, in pulling the weeds then growing, cost 30 cents. The squashes were collected in piles before any heavy frost and covered with the vines, and after a few days were carried to the barn; cost of harvesting, five dollars. Three of the loads were weighed as they were hauled up and the average weight of those loads taken, and the rest loaded as near as possible on the same carriage.

There were nine tons six hundred pounds of merchantable squashes and about two tons not fully ripe and small ones. The land on which these squashes were grown being very full of witch grass, the squashes were planted in the hope that vines would cover the ground after the potatoes were ripe and keep the grass down, and I think that they did it quite successfully.

NEWBURY, Oct. 28th, 1880.

I hereby certify that I measured a lot of land for J. B. Knight, on which squashes were grown, and there was three quarters of an acre. NATHANIEL LITTLE, JR.

I hereby certify that I hauled and weighed the squashes raised on the above mentioned piece of ground, by averaging the weight of three loads, and loading the others as near to them as possible, and there were nine tons and six hundred pounds merchantable squashes. JOHN MAHONEY.

STATEMENT OF J. W. BLODGETT.

I enter for premium one-half acre of Dewing's turnip beet. The land on which these beets were grown is part of the same field on which the Hubbard squashes entered this year for premium were raised and received the same treatment for the year 1879. About the 10th of May, 1880, I applied five cords stable manure and ploughed it in; before sowing the seed the land was thoroughly pulverized by harrowing and raking. May 17th, sowed four pounds of seed in rows fifteen inches apart; when the plants were of a suitable size cut between the rows with a scuffle hoe, wed and thinned them to about three inches apart. October 26 and 27, harvested 380 bushels.

Cost.		
	Use of land,	$5.00
	5 cords manure,	35.00
	4 pounds of seed,	1.60
	Sowing seed,	.75
	Cutting weeds and weeding,	15.00
	Harvesting,	11.40
	Ploughing, harrowing and raking,	7.00
		$75.75

EAST SAUGUS, Nov. 1, 1880.

I have measured a field of beets for J. W. Blodgett, and find it contains one-half acre of land. F. SAUNDERS.

This certifies that the beets raised by J. W. Blodgett on one-half acre of land measure three hundred and eighty bushels.

East Saugus, Nov. 1, 1880. SIMEON SMITH.

To the Committee on Root Crops:

GENTLEMEN:—I enter for premium one-half acre of purple

top turnips. The land on which these were grown consists of a sandy loam. The crop of 1879 was cabbages, planted on a compost two-thirds stable manure and one-third marsh mud, about eight cords to the acre. Middle of April the land was ploughed, manured with stable manure, eight cords to the acre, and planted to potatoes. They were harvested last of July and first of August. The land was then cultivated, harrowed and rolled; sowed the seed in rows fifteen inches apart, thinned the plants to four inches apart. Nov. 5 harvested 219 bushels.

Cost of cultivating, harrowing and rolling	$2.00
" " " 1½ pounds seed,	.75
" " thinning,	3.00
" " sowing,	.62
" " harvesting,	8.76
	$15.13

East Saugus, Nov. 5, 1880.

I have measured for J. W. Blodgett a field containing one-half acre on which grew 219 bushels of White Turnips.

W. Saunders.

STATEMENT OF AARON KNOWLTON.

The half acre on which was raised the crop of Mangel Wurtzels is a dark loam. The crop of 1878 and 1879 was Mangels, and was measured each year with 17 loads of barn manure in November, and ploughed in about 9 inches deep. It was again ploughed in May the same depth.

The land this year was prepared and sown the 15th of May, four pounds of seed to the acre; cultivated three times, the first and last time with a common weed cutter; second time with a hoe, cutting very deep to loosen the soil. The plants were thinned to one foot apart. They were harvested the 25th of October. The tops were twisted off as they stood in the field; afterwards the mangels were pulled and thrown in piles, then hauled to the cellar. One load was weighed and the rest

loaded as near as possible to that. There were 32½ loads; the load weighed was 2050 lbs., making 33 tons and 625 lbs. as weight of crop. The cost of the crop is as follows:

Cost of ploughing twice, harrowing and marketing,	$8.00
Value of 17 loads manure,	51.00
Four pounds of seed and sewing,	3.20
Cost of cultivation, weeding and thinning,	15.00
Cost of harvesting,	10.00
	$87.20

This certifies that I helped to harvest the within named crop of Mangold Wurtzels, and that there was 33 tons, 625 lbs.

GEO. A. BURNHAM.

ESSEX, Oct. 19th, 1880.

This may certify that a load of beets weighed this day, belonging to Aaron Knowlton, weighed gross, 4250 pounds; tare, 2250 pounds; net weight, 2050 pounds.

D. A. BURNHAM, Weigher.

STRAWBERRIES AND OTHER SMALL FRUITS.

The Committee submit the following report: There were three entries, one each of Strawberries, Blackberries, and Currants; an improvement on former years, but a little more competition, though increasing the labors of the committee, would have made it more interesting. Each was considered worthy of a premium, and they were therefore awarded to Mr. T. J. King of Newburyport, for crop of Strawberries, premium $10. Mr. L. H. Bassett of North Andover, for crop of Blackberries, $10. Mr. Geo. Gutterson of North Andover, Currants, $10. Their statements are appended and will be found interesting.

We found at Mr. King's a handsome field of Wilson Strawberries, in rows some seven hundred feet in length, straight

and clean. It was too late to see them in their prime, they had been picked several times and were running rather small as is usual with the Wilson after the first few pickings. The land which had formerly been in onions, was planted with corn in 1878, without manure, and nothing now applied except leached ashes in the spring before fruiting. Under the circumstances the crop was remarkable. We think too much manure cannot be given this variety, as it is inclined to set more fruit than its scant foilage can carry through. It is as yet, undoubtedly the strawberry for the *general* market, though many have *promised* to supersede it.

In viewing Mr. Bassett's field of Wachusett Thornless Blackberry, the committee were entirely unprepared for the sight presented; the bushes were literally loaded, and black with fruit. The long straight rows had been pinched back, and kept in good shape, and altogether it was a rare sight.

This variety seems desirable for home use as well as for market purposes. It is spoken highly of by Mr. Hadwen, of Worcester, in whose vicinity it is grown. One, and not the least of its recommendations being, that it is thornless; it is also hardy, while few kinds are so. The quality might be considered not so delicate as some, but it is very good and has a delicious and very decided wild blackberry flavor. Mr. Bassett's soil seems to be peculiarly suited to it, but it does well on light sandy soil.

The currants entered by Mr. Gutterson, were very fine. The bushes were young but had a favorable location, and had received the good culture characteristic of the place. They were of the cherry variety, and the fruit was very large.

Mr. Gutterson is also a very successful grower of the choicer varieties of strawberries, for which he has a well established home market; his patrons luxuriating in kinds which cannot be bought in the markets, which they doubtless appreciate. And here we would appeal to every farmer, and every owner of a piece of land, to raise their own small fruits, and enjoy, and allow their families to enjoy, some of the best of the good

things of this life, as they go along, and add another home attraction for your children to remember when they grow up. It is not difficult or mysterious; there is some skill required to grow the big fruit we read about, but fruit in abundance, and better, for eating, can be grown with very little trouble, and it would be a surprise to those who have depended on the markets, supplied only with those varieties which yield the most and carry the best, and these seldom in their best condition.

E. P. RICHARDSON, *Chairman.*

STATEMENT OF T. J. KING.

Statement concerning a crop of Strawberries, raised by T. J. King, in Newburyport, 1880. The crop in 1878 was corn; no manure. Land is a dark loam.

Land was ploughed the last of May, 1879, about 9 inches deep; harrowed with common tooth harrow. Plants were set twenty inches apart in rows 3 feet nine inches apart. Variety, Wilson's Albany. They were hoed four times and weeded three times.

When the runners were well started, they were placed in position around the plant, so as to have the young plants as near as possible, about five inches apart each way; a little earth was then placed on them with the trowel to keep them in position till well rooted.

In December they were covered with fine salt hay, at the rate of about four tons per acre. In April, 1880, the covering was removed and the land marked off into beds, 27 inches wide, with paths 18 inches wide. The plants were then dug out of the paths and a dressing of leached wood ashes applied at the rate of 160 bushels to the acre, sown broadcast. The paths were then mulched three inches deep, and mulch also worked in well around the plants.

The yield was 1224 quarts of berries, and 4000 plants removed from the paths and valued at $3 per 1000. The expense of raising crop was,

For rent of land,	$3.00
Ploughing and harrowing,	.75

900 plants, at 35 cts. per hundred,	3.15
Setting plants,	.50
Hoeing,	2.75
Weeding,	1.75
Placing runners,	5.00
Mulch,	3.50
Labor, covering and uncovering,	2.75
Ashes (20 bushels),	5.00
Labor, mulching paths,	1.00
	$29.15

NEWBURYPORT, Sept. 28th, 1880.

This certifies that I measured a piece of ground on which the above crop was raised, and found it to contain twenty rods and sixteen square feet. FRED. P. HINCKLEY.

STATEMENT OF GEORGE GUTTERSON.

The land on which the currants grew, which I enter for premium, contains twenty square rods, situated on the border of a meadow; manured last fall with one half cord of cow manure, and mulched with oak leaves. Cost of manure, applying it and mulching, $6.00.

Sold 384 qts. at 12½ cts per quart,	48.00
Cost,	6.00
Profit,	$42.00

Leaving the above amount in favor of the crop, it should be distinctly borne in mind that a large part of the bushes are not half grown, which makes a great difference in the amount of the crop.

I hereby certify that I measured the ground on which grew the above piece of currants, and it measured twenty square rods. CHAS. C. BLUNT.

Andover, July 29, 1880.

STATEMENT OF L. H. BASSETT.

The field of blackberries entered for premium by me were grown upon rather a light soil with a hard pan bottom. The variety, "Wachusett Thornless," the best kind, I think, to grow here on account of its extreme hardiness. The berry is of medium size and very fine flavor, and will produce, I think, more than any other variety. They were set four years ago this spring. The first crop picked from them was 321 boxes; this was the second year. The third year from setting I picked 1123 boxes. The fourth year from setting, that is the present season, we picked 1556 boxes, which were sold on an average, 12½ cents per box, which equals $144.50. They were grown upon three-eighths of an acre.

I trim out the old wood early in the spring, then manure them; cultivate the manure thoroughly into the soil; I then give them the first and only hoeing for the year; I spread my manure over the ground between the rows. They have been manured twice, the first year they were set and last spring—one cord the first time, one and one-half the last. The kind of manure used was good horse manure. Cost of hoeing and cultivating, $5. I hill them up about the same as you would corn. The plants are set about three feet apart in the rows; rows seven feet apart. The cost of picking and marketing is, I think, about four cents per box.

The land the berries are set on was planted to potatoes one year before they were set. I entered them for premium for the largest crop of berries, with small amount of manure and little care.

1556 boxes at 12½ cts. per box,		$194.50
Manure,	$12.00	
Labor,	5.00	
Picking and marketing,	60.00	
Trimming,	3.00	
	——	80.00
		$114.50

I hereby certify that I measured the ground on which the above crop of blackberries grew, and find it to contain fifty-two and one-half square rods. G. L. Barker.

NEW VARIETY OF WINTER APPLES.

It seems to your committee necessary in making their report to refer to the report of last year. It was then stated that Mr. Alfred Ordway, of Bradford, had applied for the Society's premium of $100, for his new variety of seedling apples. No action was taken by the committee.

The present committee, Joseph Howe, John O'Brien, Joshua N. Kent, R. P. Waters and Aaron Low, met at the Exhibition Hall at Lynn, on the first day of the fair, to view Mr. Ordway's apples, and consider the subject as to their value. The apples are about the size of a medium-sized Baldwin, not quite so red but a little striped and spotted like the Gravenstien. They are said to keep as well, or better, than the Baldwin, and the trees to be good bearers. The committee thought favorably of them, but not enough was known to justify awarding so large a premium. They therefore concluded to defer the subject until more information could be obtained. In regard to the origin of the apples it was last year misunderstood. We then stated that the apples grew on a seedling tree in Mr. Ordway's pasture. The fact now appears to be, the apples originated in a neighbor's pasture, or wood lot. Mr. Ordway noticed the fruit, thought it might be valuable, took scions therefrom, and grafted them into two of his own trees, which produced the fruit that has been presented. The owner of the seedling tree, not knowing its value, caused it to be cut with the wood surrounding it.

Another variety of apples was also alluded to in the last year's report, said to have originated by a cross of the Baldwin and Roxbury Russet. As but little was known of its origin and as some persons doubted the theory of cross-graft-

ing, or in other words believed that the fruit of the scion does not in any case partake in any degree of the natural stock, it has therefore caused a large amount of discussion.

At a meeting of the trustees in June last, they requested the committee to obtain information, so far as possible, as to the origin and value of this (said to be) new variety of fruit, and report thereon. Consequently your committee applied for information to individuals, and have received the following from W. H. B. Currier, trustee of the Society from Salisbury, embracing information that he has received from J. H. Hill, trustee from Amesbury, to whom we had previously written. The information seems to be to the point, and the letters contain, as we think, much valuable information.

It appears from the statement that the apples in question are really the Red Russet, and that they originated by a cross of the Baldwin and the Roxbury Russet. The particulars may be had by reading Mr. Currier's letters, which we shall consider part of this report, which are as follows:

SALISBURY, MASS., July 17, 1880.

To Mr. Jos. Howe:

MY DEAR SIR:—Yours of the 2d inst. received. I regret that I was not present at the last meeting of the trustees, although I might not have been able to satisfy the enquiries made concerning the apple you speak of. The whole matter had been talked over with Mr. Hill some months since, who has gathered these facts:—Hill visited the farm where Mr. Lucy purchased his apples, and at the time they were stored in the cellar. Hill pronounces them the "Red Russet," and has raised them for several years. They originated on the farm of Aaron Sanborn of Hampton, N. H., who had an orchard of Russet trees, and Mr. Lewis Sanborn grafted them into Baldwins. The number of trees grafted I did not learn, but all the trees so grafted but one bore Baldwin apples. From this one graft originated the Red Russet. This was about the year 1840, as near as can be ascertained now. Therefore, it was what fruit men sometimes class as a "sport,"—a very unusual thing in fruit culture, but common among plants and from which are obtained many new and choice varieties, to obtain and preserve which requires much care in its propagation.

The Red Russet is remarkable for its keeping qualities *under certain conditions*. It requires a cool cellar, and the apples must be headed up tight or they are liable to "shrivel." It is a great bearer and good grower, but I am informed it has one "out," it bears only every other year.

The gentleman who raised the apple is dead, but the facts were gleaned from his family, who only remember the grafting of the orchard and its results. One fact I failed to learn, whether all the grafts upon *the one tree* were of this variety or only *one* or more of them.

I incline to the opinion given by Mr. Hill, who says he has compared the apples raised on the original tree of Mr. Sanborn, and also with those shown by Mr. Lucy.

I am not much posted in fruit culture, but observation and some acquaintance with the experiments made by others confirms the now generally received opinion that the fruit of the scion will partake of the natural stock under some conditions. For illustration: Graft a Seckel into a Flemish Beauty, and your Seckel pears will in some instances be so large as to deceive fruit men, while they will preserve all the rich qualities of the Seckel. So it is that where the original tree is more hardy and vigorous, and bearing larger fruit than the graft, you may *expect* similar results. It is well known that the best Bartlett pears are grown on grafts put into old fashioned sweet pear trees—the kind that grow little hard pears, and only fit to "preserve." Bartletts grown on such trees will keep better, bear better, and are of sweeter quality. That experiment was tried by a neighbor of mine.

Some years ago I visited Seth Boyden of New Jersey, whose experiments in agriculture and horticulture are as celebrated as his successful experiments in mechanics. He had made "trial grafts," as he called them; that is, had taken three young trees, planted for the purpose—one exceedingly sour, with another less so, and one sweet; then interlock them and graft the top as if it was one tree; a pleasant sour was the result. Two trees were thus treated, and he found that the graft partook of the qualities of the original stocks. He had trees growing together in form of a crescent, some in form of a cross, some in the form of a triangle, so grafted.

Very respectfully yours,

W. H. B. Currier.

Amesbury, Mass., July 24th, 1880.

Mr. Howe:

Dear Sir:—In the letter written you I was mistaken in one point. The apples purchased by Mr. Lucy were raised in East Salisbury and, as he stated, near the Seabrook, N. H., line. They were purchased of Mr. Edward Walton, but nevertheless are "Red Russets." They grew on what is considered in that neighborhood *poor land*—dry gravelly land, or the local name is, near "Gravelly Ridge." My opinion is (it may not be worth much), that the nature of the soil had much to do with the keeping quality of the apples, and very likely the cellar where they were stored may have been of the proper temperature for the fruit, (I believe it is so considered).

This variety of apple is cultivated to some extent in that section of the town, and I find that opinions differ in respect to the quality; some farmers call them very good, others do not think so well of them.

I should think that a Baldwin apple crossed with a russet, or any hardier

or better keeping variety, would naturally partake of the hardier qualities of the parent tree. As you suggest in your previous letter, it is a question of great importance, and while some of our experts in fruit culture deny it, I think the best class of them admit the fact. It has proved so with pear culture; I can see no reason why it should not with the apple.

Very respectfully yours,

W. H. B. CURRIER.

To corroborate the above statements, we would refer to Coles fruit book, published in 1849. There described as follows: Red Russet-Large; flattish round; Russet, half covered with red; flesh firm, crispy, juicy, of pleasant rich flavor. Late winter and spring, great grower and bearer, new and promising. It seems to be a cross between the Baldwin and Roxbury Russet. Origin, farm of Mr. Aaron Sanborn, Hampton Falls, N. H.

Believing as we do that if the theory of cross grafting is correct much good may result therefrom, and believing in the old saying that experience is the best school master, we have entered largely into the subject of inquiry of those who have had experience in the cultivation of fruit, particularly those who have grafted trees that were in bearing. We find other cases not very much unlike the origin of the Red Russet.

Sometime last winter an article was published in one of the Boston papers saying there had recently been a meeting of the Massachusetts Horticultural society in Boston, and the subject of cross grafting had been discussed for the third time, and that apples had been received from Mr. George F. Eastman, of South Hadley, a variety said to have originated by a cross of the Baldwin and Roxbury Russet, and we were informed that they were pronounced at that meeting to be the Red Russet.

We immediately wrote to Mr. Eastman for information on the subject, and soon after received the following reply: His father many years ago planted a nursery and budded or grafted it with various kinds of fruit. Finding a deficiency of Baldwins, he grafted or budded a portion of the Russets with Baldwins. When the trees commenced bearing, one branch of a Baldwin tree bore Russets; that branch was removed that

the whole tree might be Baldwin. After this branch was removed another branch which grew out of the tree directly above that which was removed, and had previously borne Baldwins, then produced what is now called Red Russet; red and rusty, as one would suppose they would be, being a cross of the two kinds. They are said to keep as well as the Russet and bear every odd year. Mr. Eastman sent us some of the apples, which we carried to the trustees' meeting in June and they were pronounced Red Russet.

Another case we will refer to, equally strange as it may seem, but is from authority we have no reason to doubt. A tree was grafted near the ground with Baldwin scions. It grew up about four or five feet, then branched out, and among those branches was one of the natural stock. We saw the tree in September last; the natural fruit was a small sweet Russet then ripe. The Baldwins were said to be, when ripe, a little rusty and of mild flavor. Many more instances of like character can be named, and some that seem much more strange, but they are all peculiar cases and the like cannot be expected again, and are what we call *sport*, others call *freaks of nature.*

Last winter or spring we sent a copy of the Transactions of the Essex Agricultural Society to a gentlemen in Norwalk, Conn., a Scotchman by birth, an intelligent man of more than four score years, who has spent the most of his long life in this country in the cultivation of fruit. After reading the report he sent us a long letter saying that it contained much general information for the farmer, and was the best report he had ever seen. He also said he was much taken with the address, particularly that part which alluded to the farming in Europe. He says the American farmer can raise grain and send it five thousand miles and undersell the farmers in that country, and the speaker might have said that our prairie farmers will eventually revolutionize the farming in Europe, and break up the entailment system which has always been a curse to any nation where it has existed.

In regard to apples, he then remarks that "his experience is that to produce perfect fruit the stock must agree with the scion, and that trees budded in the nursery are liable to bear imperfect fruit. He further says that to graft a *late* keeping apple into an *early* stock will produce a poor keeping apple."

We have before us a letter from a gentleman in Westford who has a large orchard. He says "there is a great difference in the appearance and quality of the same variety of fruit, which in many instances I cannot account for by difference of soil, location or exposure, therefore I think the natural stock must have some influence on the fruit of the scion." The above is a fair representation of a large portion of our fruit growers. There are however many marked cases that have come to our knowledge, some of which we will notice.

Reply of Mr. A.:—We had a tree grafted with Baldwins. The stock produced a sweet rusty apple; the produce of the scion was a Baldwin some rusty, the flavor more mild than Baldwins usually are. He further said they grafted scions from a very sour apple tree into a sweet stock. The fruit it produced was a mild, pleasant apple, much more mild than the fruit of the parent tree, from which the scion was taken.

Mr. B. grafted Porter scions into an old tree that produced sweet apples, red and somewhat spotted. The fruit it produced was a mild pleasant Porter showing red spots.

Mr. C. grafted Baldwin scions into a tree that produced early apples, and the product decayed early. Another tree not far distant, which bore late keeping apples, was grafted with Baldwin and their product kept well.

Mr. D. grafted, as he says, with scions from a tree that produced a large sweet apple particularly for baking purposes for family use. The stock produced a small, crabbed sour apple. The product is a medium sized pleasant sour apple. We visited the tree twice when the apples were in process of ripening, for the express purpose of examining the fruit. When the fruit was fully ripe it was very pleasant but could hardly be called sweet; a juicy, good eating apple.

We asked of Mr. G., a man of large experience from a neighboring town, "what is your experience in regard to apples? Does the fruit of the scion partake of the natural stock?" "I never thought much about it," was the reply. "Is your fruit of the same variety all alike?" "No," was the reply. "Cannot you think of some case to the point?" "Yes; we have a Russet tree that bears unusually large apples but they do not keep well, and we sell them early." "What was the stock?" "It produced a large apple that rotted badly." "What are its surroundings?" we then asked. "A Russet near by that bears that variety like other trees." "What was the natural stock?" "I don't know." "Is the land alike?" "No difference in the land; there is but one tree between them."

We have much more evidence of like character which might be presented, but think it unnecessary. All the aforesaid evidence is the result of ordinary grafting, as we have known of no instance where cross grafting has been performed for the purpose of producing a new variety of fruit.

We do not suppose that by cross-grafting in all cases the varieties will mix as one can mix molasses and water, or the manufacturer can mix cotton and wool and always produce a fabric of the same quality. We do however believe that the aforesaid statements are true, as we have endeavored to get an unbiased opinion in all cases, and we think it gives sufficient encouragement to experiment.

Root Grafting. Some years ago one of our neighbors visited some of the nurseries in New York. It was in the cold season of the year when they were engaged in root grafting. The work of grafting is said to be performed by boys and girls. They dig the roots and cut the scions in the fall, and keep them moist in the cellar. Process of grafting:— Take a small piece of the root about the size of the scion and splice them together and tie with a string. In the spring they are planted in the nursery. The reasons for this process are, trees can be produced in less time, and the fruit thought to be more pure as it partakes less of the natural stock.

We have before us a letter from one of the Professors of the Agricultural College at Amherst. He speaks in strong terms of the necessity of increased attention to the cultivation of apples and of new varieties, and suggests the following method of obtaining them which is by planting seeds from the best specimens of the best variety of apples.

We have given our experience in a previous report on this important subject, and it seems necessary in this connection to publish it again.

Several years ago we planted a nursery, hoping if possible to obtain some new variety of valuable fruit. We planted it with nearly all of the seeds of the Baldwin. Before budding we selected about one hundred of the most thrifty, broad-leafed promising trees to remain and come to bearing in their natural state, the most of which were taken up and planted in another field for an orchard. They all came to bearing. There was not a Baldwin nor any one that resembled it among them. All could be improved by being grafted with such varieties as we had. We would now inquire which is the best way of obtaining new varieties of fruit: whether by planting the seeds of the best specimen of the best variety of apples or by cross grafting.

We have been repeatedly told that the subject on which we have been writing belongs to the man of science, to the pomologist, and not to the farmer. Now we do not undervalue the opinion of the man of science, but we would with the greatest modesty and candor submit; who can judge the most correctly, the man who grafts the tree, who sees and tastes the fruit, or the man of science who never saw the tree nor tasted its fruit.

In regard to those nameless apples, about which there has been so much said, Mr. Currier thinks they are the Red Russet, and that variety he thinks is remarkable for its keeping qualities under certain conditions described in his letter appended.

Would it not be well therefore to give it a fair trial on the conditions described, and is it not possible that it may be of much more value than it has been supposed to be.

We have been informed that the crop of apples the present year is small on those trees that produced those nameless apples. But we hope and expect to hear more about them hereafter.

We think the soil on which apples grow has much to do with the quality of the fruit. A person who has a small orchard which is kept in grass, &c., rich by top-dressing, said to us the other day, our apples are not nearly as good as those that grow on a certain orchard that he named. This agrees with the opinion of the writer, that high cultivation is not beneficial to the keeping qualities of the fruit. The fruit will be larger but not better. Trees that spring up in pastures, if the land is well adapted to fruit and the trees grafted, will produce fruit of better quality and better keeping than that produced on highly cultivated land.

Mr. Currier also speaks of the importance of a cool cellar, which we approve of. The temperature should be as low as possible without freezing, and to this end the cellar should be made cooler as fast as possible after the apples are put in. We practice as follows: Our cellar is well ventilated with windows and bulkhead doors. We have two bulkhead doors one of which is wired like the windows. Two thermometers, one outside and one inside; when the weather is cooler outside, we open the door and windows, when warmer outside we shut them; so on from day to day as the weather indicates. This will, to some extent at least, prevent the evil spoken of by Mr. Currier, the apples shriveling. Our apples are kept in bins.

We would suggest the method of cross grafting, which we commenced last spring. We grafted Baldwin scions into a Runnels apple tree, also some Runnels scions into a Baldwin tree. Next Spring we intend to graft from those scions into the same tree or the same variety, and so on from year to year, which we think before many years will show the result. We hope others will also try the experiment.

The Society was congratulated at the dinner table at Lynn for the improvements made in the cultivation of vegetables

and originating new varieties, and we hope the time is not far distant when the society will be again congratulated on the improvement in apples and in originating new varieties. Let us all do what we can to bring about that result.

In closing we will say we have no personal interest in the matters, have taken no part in the discussion, have thought but little on the subject, and we now think it strange that we should have spent more than four score years on the farm, having been engaged in many experiments and improvements of the day, and have overlooked the important subject under consideration. We have been much more particular in gathering information and writing this report than we should otherwise have been had we not known that we were treading on disputed ground.

JOSEPH HOW, *Chairman.*

METHUEN, Nov. 15, 1880.

REPORT OF THE COMMITTEE OF DELEGATES TO FARMERS' CLUBS, AND TOWN FAIRS.

FRANCIS H. APPLETON, *Chairman.*

After the close of the annual meeting last year, 1879, at Lynn, a few members conversed together as to the propriety and value of appointing delegates to attend meetings of Farmers' Clubs and Fruit Growers' Associations to be held in the county during the current year, that reports of them might be prepared for the transactions of the Essex Society.

Between that time and when I had to send in an essay or paper, for last November's meeting of Trustees, I had been led to believe that much good could come of such appointments. I therefore took the opportunity of bringing up the subject in a paper, which was presented to them and published in the last Transactions, in such form as to respectfully suggest that some action be taken in that direction.

The suggestion being favorably received, I later found that I

was placed as Chairman of the Committee of Delegates, and the partial responsibility of trying to start the plan on a successful footing seems to have fallen on me. I hope that I shall be able to make my report of some value and interest with the assistance that I may receive.

While members of clubs and associations, who may visit other fairs than their own, will undoubtedly secure information that will be made known to their fellow members, at the same time, through our Committee of Delegates, much information, which can be gleaned from the various fairs that occur, can be reported and then be printed in the Essex Society's Transactions, and run the chance of reaching others in their own field of work, whom they themselves may not reach, and also very many others all over the county.

Such a report might result in an increased variety of thought and interest, lead others into new fields of work, and be the means of drawing out inventive genius, or stimulating ambition, which often lies dormant until aroused by some new train of thought. I state a few examples which occur to me:

The admirable plan of visiting farms, adopted by the West Newbury Club, I feel sure is known and understood but little among the farmers of the county generally, who could profit much and have their plan of farming bettered by receiving similar visits several times during a season.

To be sure there are always some few who would be slow to adopt such an advanced plan, but an explanation ought to overcome their objections. It certainly must tend to improve the individual farm and its owner, and suggest many possible benefits that could result, including the formation of a club and attendance at its discussions and conversations. (See account of the Club later on.)

I have secured plans of action from several clubs, whether they have had shows or not, and I am sure they must be generally useful and interesting. I hope that by representing the pleasures, as well as the more solid advantages, to be derived from clubs, to succeed in inducing new localities to form them

soon. The ideas they promote would tend to brighten some of those necessarily dull days which our winters bring with them, and impart valuable knowledge.

Many of you have undoubtedly had experiences connected with Agricultural or Horticultural work that have been curious, peculiar or interesting; they may have proved so odd that you have not thought them worth mentioning, or such that you believed might provoke only a laugh or smile among your acquaintances; or they may have been so interesting to you that you immediately called in your neighbors to consider them. The result of this may have been that they were either unknown beyond yourself, or they may have benefitted your immediate locality and done good only so far; but to the experimenter, who is seeking for all facts bearing at all upon Agricultural or Horticultural experiences, they would have been of considerable use, and there is not a systematic record of such facts as I have just named, and which, if existing in a tangible form, might advance either of these most useful branches of industry so much more quickly that the present age might benefit more by its own findings instead of waiting for their development in a future generation.

I would most respectfully urge the importance of bringing forward from individuals any and all such information and endeavoring to place it where it will best reach the eyes of the public. Let it reach the Essex Society's Transactions, and at some future day let us hope that we can secure an index to all past publications which will bring their contents readily within our reach. Encourage the sending in of essays for our Society's publication.

Practical experience with ensilage, the curing of green corn-stalks in pits, which is now being much talked of and considerably used, would be most valuable for general publication.

Some of the corn thus treated is said to result in extremely wholesome food, when it has been cured with the air entirely excluded from the mass that is compressed in the pits; and, again, if the work of curing it is but slightly imperfect the

result may in some degree be compared, I am told, to a poorer quality of Brewer's grains. The kind of corn used affects the quality of the result somewhat, and also the cost. The process is not a difficult one, but requires exactness and care to secure success.

As ensilage (a process of cutting up), of green corn appears to offer a cheap and good food for milch cows and other animals, it would seem to be a most fruitful subject for experiment and discussion. It must not be forgotton that the French experimenter on this subject, Monsieur Goffart, tells us that other high-growing crops of great yield can be treated in the same way, and names sorghum as another prominent crop for ensilage. This would probably not be advisable in our latitude and climate. An interesting translation of Monsieur Goffart's book is published by J. B. Brown, 55 Beekman street, N. Y., with illustrations.

Much has been written lately as to the cost of raising Indian corn in New England, and the average of crops has been largely increased during the last few years, proving that it has been found profitable for our farmers to raise more corn than had previously been their custom. The value of the dried stover has been variously estimated, and I have seen it named as high as $8 a ton, which I believe to be too high. When the weather has been so favorable that it has been housed in a condition to give the greatest possible amount of nutriment to our stock, we can award it its highest money value in figuring the cost of our corn crop per bushel; but the weather is generally such that it cannot be housed in first-class order, and under such circumstances what its practical value may be is still an interesting question. Whether it would be of more value cut up when dry, and thus placed before our animals for them to pick out the best part, understanding that the remainder would be most valuable rotted with the manure, or whether it is better to feed it as it comes from the field, and let what is left of the longer stocks take care of themselves in the manure heap, still remains a doubtful question in many

minds. Is dried corn stover, which is not perfectly cured, of more value as food for milch cows, than it is cut up and mixed with our manure heap ?

In attempting to determine values by chemical analysis, I believe that it is *possible* for two chemical analyses of first-rate dried corn stover on the one hand, and of a poorer quality on the other, to differ very much less than does their real value as food for our milch cows. Does not a similar meaning apply to the analysis of artificial fertilizers ?

Cannot your Horticulturists, who have experience in grafting and budding, make known any interesting or curious observations which they may have made ? Answers to the following would be interesting.

Have you improved the flavor of especial fruits by grafting on certain other trees ? Have you ever tried grafting the apple on the pear, or the pear on the apple, and with what results ?

A friend of mine had what was called an apple pear—the shape of a pear and flavor of an apple. Have you a variety of experience, or any small quantity of experience, on such subjects ?

By getting such information into public notice, you would benefit yourselves by the attention your experience would attract, and it would probably be the means of inducing correspondence which would bring additional interesting facts to you, being a public benefit besides.

Cannot members of local clubs be induced to contribute more essays, based upon Agricultural or Horticultural work accomplished by their Club, including subjects discussed at the winter meetings, in competition for prizes offered by the Essex Society, as a means of extending this work ?

The prizes offered for Essays, Reports, and Farm Accounts, and entries of Farms, do not find competition for them in such numbers as they deserve, and should attract more entries.

May I call your attention to Orchard Grass, which seems to make excellent hay if it is cut sufficiently early when in the milk, and not allowed to stand too long. There are a very

large variety of grasses, and it would be well to encourage experiments with them, after their characteristics have been studied. This can be done in ex-Secretary Chas. L. Flint's book on " Grasses and Forage Plants."

The annual social meetings that accompany farmers' clubs cannot be too highly praised for the good they can do and the pleasantness they can provoke. Who of us does not know that many a time a good laugh or a friendly chat has dispelled a fit of the blues, or the beginning of some other more real trouble. A good laugh sometimes cures quicker than the best medicine.

The values to local clubs and associations of delegates from our society, who are public speakers, is considerable, and their sending can be commended on this score also.

I have suggested subjects that would prove of general interest, some of which are to be discussed at the Farmers' meetings the coming winter. A list of the subjects to be discussed this season by the Andover Farmer's Club is included later on, and a few members are assigned the duty of stating the discussion for each evening, well in advance, so that they can prepare themselves beforehand, and after the regular speakers have concluded their remarks, the members are invited to speak upon the subject, and a limited length of time is allowed to each, thus giving time to hear a good variety of opinions and experiences.

I also notice that it is generally the custom for the clubs to devote one evening during a season to a social entertainment; also that some clubs devote one or two evenings to conversations upon any subjects that may previously be suggested, or suggest themselves at the time of meeting.

I have written letters to the Presidents of all Farmers' Clubs and Fruit Growers' Associations that I knew of in the County, and have incorporated in this report the replies which I have received, and which I feel sure must prove valuable, interesting and instructive. I am indebted to the writers for

their goodness in assisting me thereby in carrying out the idea I had of a report.

On the day assigned for West Newbury Fair, with the weather somewhat doubtful, I started for it, but not until reaching Newburyport was it possible for me to learn that the Fair was postponed until the following day, when I was unable to attend. My success in attempting to visit the Bradford Fair was equally good, as I learned upon reaching Haverhill that I was a day too late, a mistake due solely to my not having more carefully referred to our Secretary's note to me. However, I enjoyed an entertaining drive across the country to the Amesbury and Salisbury show, which took place the same day, and was continued into the following day. I have thus only seen one Fair, beside our own, this season, and can testify to the excellent quality of its exhibit and the polite attention of the members whom I met.

The exhibits of the various Clubs and Association Fairs differ widely. Some comprise a show of home products, fruits, vegetables, flowers, &c., in a suitable hall, and to others are added live stock, ploughing matches, testing different teams, etc., etc. Additional features are addresses, the dinner with its speeches and announcement of awards, music and promenade concerts in the evening.

I would especially commend the "objects" of the various Clubs and Associations which are given in connection with the following reports, and would urge their careful consideration, as suggesting field of pleasant and profitable work which need not prove interruptions to our regular routine of work.

I believe in such Clubs and Associations as we are now considering, as being the means of bringing nearer together those whose homes are separated, and enabling them to better advance the interests of this locality.

Mr. J. Henry Hill, President, has sent me the following history of the Amesbury and Salisbury Agricultural Association :

The Amesbury and Salisbury Agricultural Association was organized April 2d, 1856, with the following board of officers: Dr. Josiah B. Gale, President; nine Vice Presidents; George Turner, Secretary; John G. Whittier, corresponding Secretary; Francis Brown, Treasurer.

The objects of the Association, as set forth in the Constitution, were, 1st: The promotion and advancement of all kinds of Agriculture and Horticulture; Discussions, Lectures, Exhibitions and Experiments; procuring the most rare and valuable seeds, scions, plants, shrubs and trees.

2d. The establishment of a correspondence with other societies; by planting and cultivating shade and ornamental trees on the streets and avenues of the town; by the formation of a library for the use of its members, including in the selection works upon Horticulture, Agriculture, and kindred subjects, and such reports as may be obtained from Town and State Societies and the Patent office.

The first exhibition was held Thursday, Sept. 28, 1858. Address by the Rev. Willard Spaulding, and John G. Whittier wrote his celebrated "Harvest Hymn" for this occasion.

1859. The second exhibition was held. Address by T. D. P. Stone.

May 14, 1860. Sixty (60) shade trees were purchased by a committee of the Society and planted along side the walks in our public streets and properly protected. At other periods additional trees were set out, and to-day nearly all the shade and ornamental trees, which beautify the town, owe their existence to the efforts of this Society. For this purpose it has expended from its funds and by solicited donations, more than two hundred and fifty dollars, aside from the labors of the various committees who gave their time to the work.

Sept. 27 and 28, 1860. Third exhibition; address by Rev. N. Lassell; poem by Harriet Mcuen Kimball.

1861, Oct. 3d and 4th. Fourth exhibition; address by Rev. J. C. Fletcher.

1862, Sept. 28th. Fifth exhibition; address by Rev. H. G. Safford.

1863, Oct. 1st and 2d. Sixth exhibition; address by B. Perley Poore.

1864, Oct. 5th and 6th. Seventh exhibition; address by Hon. Allen W. Dodge; poem by Gail Hamilton.

1866, Oct. 4th and 5th. Eighth exhibition; address by Hon. Geo. B. Loring; poem by Mrs. M. A. Powers.

1867, Oct. 3d and 4th. Ninth exhibition; address by Chas. L. Flint, Secretary of State Board of Agriculture; poem by John G. Whittier, "Once more the liberal year laughs out."

1870, October 6th and 7th. Tenth exhibition; address by Hon. Thomas Russell.

1871, Sept. 21 and 22. Eleventh exhibition; address by Prof. James R. Nichols; poem by P. P. Whitehouse.

1872, Oct. 2 and 3. Twelfth exhibition; address by Rev. P. S. Boyd; poem by S. Hoyt.

1873, Oct. 2 and 3. Thirteenth exhibition; address by Hon. Geo. B. Loring.

1874, Oct. 1 and 2. Fourteenth exhibition, and address.

1879, Oct. 9 and 10. Fifteenth exhibition held.

1880, Sept. 23 and 24. Sixteenth exhibition; address by Rev. J. F. Spaulding, and remarks by Hon. Geo. B. Loring, B. Perley Poore and James P. King.

These several exhibitions have been fully attended, and great interest has been awakened in the cause of Agriculture and Horticulture thereby in this immediate section. In truth, we may say, that previous to the organization of the society, fruit culture received very little attention. It has been the means of spurring the farmer and gardner to learn and profit by the experience of those who have given thought and attention to the best methods af cultivating farm and garden crops, and by other measures added much to the general improvement of our farms and their surroundings.

The Library of the Association contains 300 volumes, and has cost the Society $500.

It has received from exhibitions, in receipts and donations, since its organization, $6586.83. The expenditures, including

amount paid for premiums, for library, and on account of Fairs held and matters incidental thereto, have been $5586.83. The amount now on hand and invested is $1000.

This in brief is a history of the Society; but much might be written as evidence of its organization and work, even making all due allowance for the more general intelligence that has been spread over the land by and through the influence of the printed page, and the County Society, with its yearly display of farm and garden produce, and the improved herds of cattle and horses.

Hon. Hayden Brown has sent me the following history of the West Newbury Farmers' Club:

This club was organized Dec. 6th, 1856. It commenced with barely a dozen members, and held its meetings in private houses for several years. These meetings were always conducted in a dignified manner, always interesting, and afforded those living widely apart an opportunity of cultivating more friendly relations with one another.

In 1862, the Club held its first exhibition. Dr. Geo. B. Loring delivered the address. Its membership at this time had reached rising 60, mostly good solid farmers.

This first "Fair," as it was called, was conducted on the free ticket plan, nothing being charged for admission to the show or the table. It held two more "Fairs" on the same plan (3 in all). These taught a more needful lesson. The result is more business like methods.

At present the Club numbers something over a hundred members. Its management for the last ten years is as follows:

A programme is made up a whole season ahead for about 16 meetings. Four of these usually are conversational; that is, no subject is given out, any one talking on a subject to suit himself; these are often the most interesting meetings of the season. At all other meetings, subjects are given out (not in the form of questions), and two members assigned, who speak as long as they please. The main object is to bring out facts and practical ideas.

At the closing meeting of the season, usually about the last of March, three committees of three each are appointed, whose duty it is to visit farms belonging to members of the club, say about 27 farms in all—9 farms to each committee. They are instructed to visit twice, once in June and once in September. They examine everything pertaining to the farm-crops, weeds, fences, buildings, trees, animals, &c., taking notes as they find things.

These committees report in writing at a special meeting set apart for that purpose. Many of these reports are quite spicy; several have found a place in print. They never visit a place in absence of the proprietor.

It has been the practice for several years to begin the meetings in November, the first a basket picnic, at which the members take their families, young and old. Tables are spread for two or three hundred; exercises consist of speeches, music, &c., and a good time generally.

The club has held fourteen exhibitions, and as the result of various experiments has settled down to about the following plan of conducting these occasions, viz.: A ploughing match in the morning; hall opened at 11 A. M.; dinner at 1 P. M.—*all on time exactly*; tables set in a tent, usually 800 to 1000 plates; eatables provided by the ladies; admission by tickets.

After spending one hour at the tables the company is called to a stand (out doors) to hear the speaking. Ten to fifteen distinguished speakers are secured for the occasion. This has given better satisfaction than the plan of a set address of a full hour by a single individual.

It matters very little, either, what is talked about. The idea is to have a good time. We don't expect to be instructed in farm matters in this way. Short speeches, too, only are in order. A first-class band is an indispensable requisite on this occasion. During the afternoon exercises the tables and dishes in the tent are cleared away, and everything put in order for a first-class promenade concert in the evening.

The club has never failed to make these exhibitions pay; in

fact, it has had no other source of income during the last ten years, and it has in its treasury to-day between three and four hundred dollars, besides an equal amount invested in tables, lumber, &c., used at fairs.

The Club has something over one hundred members at the present time. It never was in a more flourishing condition.

Mr. William H. Tozer, Secretary, has sent me the following history of the Ipswich Fruit Growers' Protective Association :—

The date of organization is Sept. 22d, 1866. Its object you will perceive by the Constitution, which you will please find enclosed. [Sect. 9. It shall be the duty of every member of this Association to use all proper means to detect all persons who shall be guilty of trespass or larceny in his field, orchard or garden, and when thus detected, within twenty-four hours thereafter, to make complaint before a magistrate against such offender or offenders, and to do nothing to delay or hinder the execution of the law.

It shall be his duty, also, when he shall know or be informed of the commission of trespass or larceny in the field, orchard or garden of any other member of this Association, forthwith to notify such other member of the same, whose duty it shall be to make complaint, as if he had himself detected the offender.

Sect. 2. This Association may hold annually a Fair, at such time as the Association shall determine by vote, for the exhibition of all varieties of Fruit, Flowers, Vegetables, Articles of Home Manufacture, and any other articles of produce which may be entered, and that the Board of Directors award premiums to all such contributors, as in their judgment are best entitled to them.]

We have held a Fair annually since 1868, excepting the two years that the Essex Agricultural Society held theirs in this town, and always with fair success. The Association now numbers 226 members, with a fund of about $600 on deposit.

The directors offer annually $200 in premiums for the production and best display of Fruit, Vegetables and Articles of Ipswich Manufactures.

Our Fair is generally held two evenings, on the first of which the annual address is delivered by some friend of the Association ; the second evening the awards are announced, which occupies a good portion of the evening.

It is intended to make the Fair of next year the best of all. Quite an interest is manifested by farmers and citizens generally in producing Fruits, &c., that will bear off the first premium.

I have very briefly given you some of the leading features of our Association, hoping you will excuse its incompleteness.

Mr. Albert Berry, President, has sent me the following history of the North Andover Farmers' and Mechanics' Association :—

The North Andover Farmers' and Mechanics' Club originated in an invitation, issued by James T. Johnson, in February, 1878, to all those who were in favor of forming a Farmers' Club in North Andover to meet at the house of Col. Theron Johnson, on the evening of March 6th. In response to that invitation twenty-two persons met and formed the Club, by the choice of Eben Sutton, Chairman, and James T. Johnson, Secretary. Committees were chosen to nominate permanent officers and to draft a constitution and by-laws, and report at the next meeting; also a committee of one in each school district to interest the citizens and obtain signatures. It was voted that the officers should be a President, three Vice-Presidents, Secretary and Treasurer ; that the fee of membership should be one dollar ; that fifteen years should be the minimum age at which members should be received. The meeting then adjourned to March 20.

At the next meeting the Club was permanently organized by the choice of Eben Sutton, President; J. D. W. French, John

P. Foster and Albert Berry, Vice-Presidents; Loring B. Rea, Secretary, and James T. Johnson, Treasurer.

It was voted to accept the constitution and by-laws as reported by the committee. A committee of five was chosen to prepare topics for discussion and appoint leaders; also a committee of three on membership, to whom must be referred the names of all applicants. It was voted that a committee of nine be appointed by the executive committee for the inspection of farms, according to by-laws, Sect. 3, Article 8. After the transaction of other miscellaneous business the meeting adjourned. At a subsequent meeting of the Executive Committee the President offered fifty dollars to be divided into two premiums of thirty and twenty dollars, to be awarded the two best practical farmers in the Club, the premium to be awarded by the chairmen of the three inspection committees. The first premium was awarded to J. Gilbert Chadwick, the second to John P. Foster.

At the Essex County Fair, held in Lawrence, 1878, the Club made an exhibit of fruit, vegetables and town teams. The ox team consisted of nineteen yoke, and the horse team of eight pairs, and they were awarded the first premium of thirty dollars on each team, the proceeds going into the treasury of the Club.

During the winter of 1878 and 1879, we held a very successful series of meetings, at the Town Hall, for discussions that created much interest in the Club and drew in many new members. In February, the President resigned his office, as he was to be absent from town the remainder of the season. At the annual meeting in '79, John P. Foster was chosen President; J. D. W. French, Albert Berry and William J. Dale, Jr., Vice-Presidents; Loring B. Rea, Secretary; and James T. Johnson, Treasurer. In September we held a Fair that was in all respects a success. There was exhibited by members of the Club one hundred and sixty head of stock. Among them was the thoroughbred herd of Holsteins from the farm of Hon. Wm. A. Russell; the thorough-bred herd of

Ayrshires from the farm of J. D. W. French, and a herd of Jerseys from the farm of William J. Dale, Jr., with other fine specimens of graded stock. There was a good show of sheep, swine and poultry, a ploughing and drawing match, a very fine display of fruit, flowers and vegetables, fancy work, and works of art in the hall. A dinner was provided, at which three hundred and fifty persons sat down. To close the festivities of the day there was a ball given at the Town Hall, that was very fully attended, the proceeds of which, added to those from the hall of exhibition, paid all expenses and left over fifty dollars in the treasury.

During the winter of 1879 and 1880, our meetings for discussions were continued with increasing interest, the members having increased to one hundred and sixty. At our last annual meeting the following officers were chosen, the Club having adopted the rule that no member shall serve more than one year. President, Albert Berry; Vice-Presidents, J. D. W. French, William J. Dale, Jr., and Moses T. Stevens; Secretary, Daniel A. Carleton; Treasurer, James T. Johnson.

During the brief existence of the Club, it has exerted a marked influence, and it has awakened an increased interest in farming throughout the town that can but be beneficial. A part of the town is agricultural and a part manufacturing. There has long existed a feeling of jealousy between the two sections, each thinking the other the more favored one. The business of the Club, its meetings for discussion, its sociables and its fair have brought the people together; they have become better acquainted with each other, and this jealousy is fast wearing away, to the mutual benefit of both classes. The Club is firmly established, and we anticipate for it a successful career.

Article II. of the Constitution reads: "Objects. The object of this club shall be the social and material benefit of its members, by encouraging the adoption of the best methods of doing farm work; by the improvement of the roads and roadways in town; by planting trees, building sidewalks, &c.; by

establishing and protecting good grass plats and borders in the streets and public squares; establishing and maintaining such sewerage as shall be needed: providing public drinking troughs, and generally doing whatever may tend to the improvement of the town.

Mr. M. C. Andrews, President, has sent me the following history of the Andover Farmers' Club:—

In reply to yours, I will say that the Andover Farmers' Club was formed and commenced holding meetings for discussions, &c., Nov. 3d, 1879. Meetings are held one evening every other week, from Oct. 3d to the last of March. The object of the Club is to promote the interest of Agriculture, and social and intellectual improvement, &c.

The present membership is ninety-six, and the meetings are well attended. The officers of the Club are, and have been since the formation: M. C. Andrews, President; Rev. Francis H. Johnson, Secretary; J. L. Smith, Treasurer. All members are elected by vote, and become members by paying a small admission fee. I enclose a programme for this winter's meetings, which will explain itself, also a copy of Article 2 of the Constitution:—"Objects. It shall be the object of this Club, 1st. To call attention to all proposed improvements in agriculture, especially those which relate to tilling the soil, stock-raising, dairy management, horticulture, use of artificial manures and mechanical inventions; and to discuss the adaptability of such methods and appliances to the circumstances of this community.

2d. To advocate the judicious conservation of the natural beauties of our town, while encouraging and assisting in the free discussion of all plans for improvements.

3d. To foster the study of the natural sciences, and stimulate original investigation."

Subjects for discussion, with appointed leaders, 1880 and 1881. Meetings to commence at 7.30 P. M.

1. Small Fruits; how shall we preserve them, or make the most profitable use of what is wasted? Special reference to Cranberry culture.

2. What is the most profitable stock to keep on a farm and the comparative merit of horse and ox labor?

3. Silos or Ensilage for Feed; Is this method of preserving green fodder practicable for farmers generally?

4. Sheep Husbandry.

5. Poultry. Special reference to Turkeys, Ducks and Geese.

6. Experiments with Fertilizers.

7. An entertainment to take place Dec. 27th.

8. Forestry.

9. Market Gardening—Vegetables.

10. Farm Machinery.

11. Dairying.

12. Scientific.

13. Floriculture.

FARMERS' INSTITUTES.

The first Institute held by the Society was at Plummer Hall, Salem, March 18th, 1879; Benjamin P. Ware, President, presided. Mr. J. J. H. Gregory read a paper on "Vegetables and Seeds." Mr. Francis H. Appleton, of Peabody, read a paper on "planning and management of a farm," both of which were followed by discussion participated in by members present.

The second was held at Haverhill, May 7th, 1879; Mr. B. P. Ware presided. The meeting was opened by a paper by Ansel W. Putnam of Danvers; subject, "Manures and their Application." The next papers were by Dr. Robert Wood, V. S., of Lowell, on "The Digestive Organs of Animals," and by Dr. William Cogswell of Bradford, on "Bees and Bee Culture." Discussions followed the reading of the several papers.

The third was held at Lawrence, December 6th, 1879; B. P. Ware presided. The meeting was opened with an address by Hon. Chas. L. Flint, Secretary of State Board of Agriculture and President of the Massachusetts Agricultural College, on "The Advantage of the College in the Education of Farmmers." The second paper was read by Mr. J. D. W. French of North Andover, on "The Production and Sale of Milk in Essex County." Discussions followed.

The fourth Institute was held at Lynn, Jan. 22d, 1880; Mr. Ware presided. Mr. O. B. Hadwen, of Worcester, opened the meeting with an address on "the Farmer's Position and Opportunities." In the afternoon, John O'Brien, of Bradford, read a paper on "Fruit Culture," and both subjects were fully discussed by members present. Resolutions in opposition to the proposed union of the Massachusetts Agricultural College with Amherst College were passed, also in favor of the establishment at the Agricultural College of an experimental station by the state, and it was voted that they should be signed by the President and Secretary of the Society, and presented to the Legislature.

The fifth Institute was held at Newburyport, Feb. 26, 1880. Mr. William Little, of Newbury, read a paper on the subject of growing vegetables. A statement in relation to growing sugar beets and the process of making sugar from beets was made by Mr. Blackwell, Treasurer of the Portland Beet Sugar Co. In the afternoon, a discussion was had on the topic of the last meeting, (continued), fruit culture. This meeting closed the series for the year.

The sixth Institute was held at Danvers, on Dec. 20th, 1880. The subject in the forenoon was, "Is farming in Essex County profitable? opened by Aaron Low of Essex. In the afternoon, the subject of "Ensilage" was discussed, with statement by John G. Walcott, of Peabody, in opening.

CHAS. P. PRESTON, *Secretary.*

COMMEMORATIVE.

At the annual meeting of the Society held at Lynn, September 28th, Hon. Geo. B. Loring paid a high tribute of respect to the memory of Dr. Jeremiah Spofford, of Groveland, and Gen. Josiah Newhall, of Lynnfield. As an unusual number of members had died during the year, the Society voted that the President and Secretary be requested to prepare a suitable notice of the loss that has fallen upon the Society in the death of these valuable members.

The following resolutions were passed :

Resolved, That in the death of Josiah Newhall, this Society is called to mourn the loss of one of its earliest friends, and that we shall ever retain a lively recollection of his many virtues and his active interest in the cause of agriculture through the long period of his connection with us.

Resolved, That we tender our sympathies to the relatives and friends of Gen. Newhall, in their bereavement, and that the secretary be requested to forward a copy of these resolutions to the family of the deceased.

Gen. Josiah Newhall was one of the original members of this society, and has always been untiring in his efforts to promote its best interests, freely giving the results of his long experience and careful research to aid in the progress of the cause that he so much loved. Since the formation of the society, with scarcely an exception, he has attended its meetings and served on important committees, very frequently serving as chairman of committee on fruits. He delivered one of the orations before the Society, and served many years as trustee and Vice-President. He filled acceptably responsible positions in town affairs, the State Legislature and the Militia. He was also one of the founders of the Massachusetts Horticultural Society and held a prominent position in it. Gen.

Newhall has always been a careful observer, a close student of nature, literature and science, and an enthusiastic lover of the cultivation of fruits and of the farm. Verily in his death we have lost a wise counselor, a true friend, and a valuable officer.

Dr. Jeremiah Spofford, of Groveland, one of our oldest members, has been associated with us as an active and valuable member. At our annual gatherings, he has encouraged us by his presence and words of wisdom, and for several years served as trustee. Dr. Spofford was a man of profound learning in political economy, and took an active interest in all questions of public importance. By his death we have been called to mourn the loss of one of our most respected members.

Jonathan Berry, of Middleton, John Danforth, of Lynnfield, John Day, of Boxford, John D. Cross, of Salem, Joshua N. Kent, of Newburyport, A. D. Wait, of Ipswich, on account of their prominent connection with the agriculture of the county, have been elected from time to time to the board of trustees of the society. They have served faithfully in that capacity and on various important committees. By their death the Society loses valuable members, and their associates highly esteemed friends, who will long be remembered.

Since the annual meeting, death has removed another efficient member of our board of trustees. Thomas T. Paine, of Marblehead, attended the November meeting of the trustees, and was soon afterward attacked by a fatal illness. He has been one of our trustees for three years, and will be mourned by the members of the society as an honest and earnest co-worker, beloved for his real worth by all who knew him.

ATTRACTIVE HOMES.

BY CLARA M. NICHOLS, LYNN.

There are so many reasons why flowers should be cultivated, that I have ventured a few hints to those who have had less experience than myself. What shall we cultivate ? is the first question that occurs to the novice, and this cannot be better answered than by referring him to the list that the Essex Agricultural Society offer premiums for, with the addition of two varieties,—Asters and Carnations ; of the latter there are three kinds, Dianthus, Caryophyllus, Picotee (Dianthus Caryophyllus), Pink (Dianthus Hortensis), either or all of which will give good satisfaction.

Perhaps there is no better way to impart the knowledge most desired, than to give our own experience in the flower garden. In purchasing seeds, I have been better pleased with separate colors than with mixed, as it is not necessary to have many colors to make attractive beds.

Of Phlox Drummondi, scarlet and white will be more pleasing to the eye than any bed we can get from mixed seed ; but whatever is used, always have one-half white. Of Zinnias, you can use more colors to advantage. I plant scarlet, orange, salmon and white ; these I set in form of a hedge, in double rows, nine inches apart, and a foot apart in the rows.

Of Asters, there are so many varieties to select from, that one, in looking over a catalogue, will be puzzled to know what to choose. After some years' experience we have settled on the following kinds : New Rose, two colors, carmine and white ; Cocardean or New Crown, carmine, violet, each with white centre ; Imbrique Pompon, crimson and white ; and the Hedge Hog or Needle, quilled, very curious and fine.

Antirrhinum or Snapdragon, a perennial that flowers the first season, should be sown early, as it is a constant bloomer; set in beds eight inches apart. It is easy to grow and sure to please. Balsam, like the Aster, is a favorite with me; needs a little extra care to grow it to perfection. We nip off all the laterals, and thus when in bloom it forms a perfect wreath of flowers.

Celosia, an attractive and showy annual. The seed should be sown in a hot bed or in the house, and transplanted into a rich soil, if we expect the best results. The Calendula, or Pot Marigold, is an old familiar plant, and likely to occupy a prominent place in our gardens. There are several new varieties that have been introduced within a few years, one of which I will name here and recommend to all: Calendula Officinalis Le Proust, uniformly double. The color is nankeen edged with brown.

Salpiglossis is a half-hardy annual, about fifteen inches in height; should be set about six inches apart, and does best in a sandy soil. Pansies make such a beautiful bed, and are so easily grown, should be cultivated by every one who has a piece of ground at his disposal.

Ten-weeks Stocks, a plant that gives abundance of flowers of a delightful fragrance. White, carmine and red are all the colors grown by us. Verbena, a very fine and popular bedding plant, is indispensable to a good flower garden. Plant some seedlings, and if you live near a Green House, buy pot plants of scarlet and other colors, half of which should be white.

Plant plenty of Delphinium, or Larkspur, and have little hedges of white rocket Candytuft, planted at different seasons, to always have it in bloom through the season. If the above rules are followed, and seeds purchased of a trustworthy seedsman, you will have the satisfaction of an attractive home and flower garden.

TREADWELL FARM.

The Committee on the Treadwell Farm report that the farm is still under the lease to Mr. T. W. Pierce.

As will appear by the annexed statement made by Mr. Philbrick, foreman, good crops of the various kinds have been raised on the farm, indicating an increase in its productive capacity. The amount of barn manure applied was forty and a half cords. Of other fertilizers an amount costing $377.

CROPS.

English Hay,	15 tons.
Meadow Hay,	16 "
Barley Fodder,	5 "
Corn in the ear, from 11½ acres,	1358 bush.
Potatoes,	335 "
Turnips,	430 "
Sugar Beets,	25,110 lbs.
Cider Apples,	150 bush.
Winter Apples,	75 bbls.

The beet crop, on account of the drought, was a small crop. It was designed as an experimental crop, and the beets were sold to the Portland Beet Sugar Company, and beet pulp for feeding purposes taken in exchange. To carry out the experiment, the manner and cost of cultivation, manures, &c., together with the ascertained value of the pulp for the feeding of cattle, will be reported hereafter.

During the year, a substantial rail fence has been built on the highway leading to the buildings, and a sufficient number of substantial gates for entrances to the several fields, the locust posts being cut on the farm.

The expense to the Society was not far from one hundred and fifty dollars.

The farm shows an improvement from time to time, by the removal of bushes from the lines of wall and more thorough cultivation.

CHAS. P. PRESTON, *for the Committee.*

ESSAYS AND REPORTS.

The Committee to award premiums for Essays and Reports would report that it is not easy to discriminate between so many very meritorious reports as have been made the present year, among which are those on Milch Cows, Swine, Bread and Honey, Small Fruits, &c. On one or two of these, considerable labor has apparently been bestowed, and it is not impossible that your Committee may not have discriminated wisely in not including some one of them as among those which should receive premiums. They would have given a premium to the Chairman of the Committee of Delegates, for his report upon the workings of the local Farmers' Clubs, but, under the rules of the Society, no premiums can be given for reports which are not upon the subjects for which the Society offers premiums. Taking all things into account, the Committee decided to award the premiums as follows :—

For Reports,—first premium, $10, to Joseph How, of Methuen, for his Report on the new variety of Winter Apples, which contains valuable ideas upon the utility of cross-grafting and improving apples.

Second premium of $8 to Benj. P. Ware, for his report upon Farms, as embodying, in an interesting form, facts in the experience of others, the tendency of which is to encourage intelligent farming by the young men of Essex County.

Third premium, $6, to Aaron Low, for his report upon root crops.

Two essays were offered. One was upon the cultivation of Grass, the other upon Attractive Homes. Though these were very good in themselves, the Committee had doubts whether either of them contained information or ideas sufficiently new or striking to entitle them to a premium. As they considered, however, that increased attractiveness to farmers' homes was a subject to which increased attention could be given with real advantage to the farmers' families, and as the essay upon this subject contained some results from actual experi-

ment, the Committee concluded to give to Clara M. Nichols, of Lynn, $6, the amount awarded for third premiums.

Nathaniel A. Horton, Daniel E. Safford, Charles P. Preston,—*Committee.*

Dr. EDWARD H. PAYSON, TREASURER, IN ACC'T WITH THE ESSEX AG. SOCIETY, Cr.

1879.			1879.		
October.	To balance of former account,	$816 05	October.	By Premiums and Gratuities awarded by Trustees,	$1717 00
	To Bank dividends for October,	385 30		By purchase of five shares in Hide & Leather N. Bk.,	548 12
	To net receipts of Exhibition at Lynn, per Committees' report,	667 37	Nov. 10.	" " " " " " " "	553 75
Nov. 12.	To State Bounty, $600. Bank Tax refunded, $168 35,	768 35		By Secretary's account,	245 25
Dec. 16.	To new membership, $111. Jan. 1, 1880, Conpons E. R. R., $21,	132 00	1880.		
1880,			October.	Sundry bills paid as follows:	
April.	To Bank Dividends for April, $411.80, Coupons E. R. R., $21,	432 80		Printing, $350.49. Exhibition, $30.37, Farmers' Institute, $34.56. Rent, $25. Ins., $18.32,	458 74
May 10.	To Rent of Treadwell Farm,	500 00		To Balance to new account,	425 76
	To Premiums unclaimed,	246 75			$3948 62
		$3948 62			

FUNDS BELONGING TO THE SOCIETY, OCTOBER, 1880.

10 shares in Hide & Leather National Bank, Boston, cost,.....	$1101 87
5 shares in First National Bank of Danvers, par,.....	375 00
16 shares in Warren National Bank, Peabody, cost,.....	1595 40
8 shares in National Exchange Bank, Salem, par.....	800 00
18 shares in First National Bank of Salem, cost.....	1914 66
12 shares in Mercantile National Bank, Salem, cost.....	1226 50
23 shares in Mercantile National Bank, Salem, cost.....	1189 50
15 shares in South Danvers National Bank, Peabody, cost.....	1471 25
3 shares in National Revere Bank, Boston, cost.....	377 62
42 shares in Asiatic National Bank, Salem, cost.....	1281 25
18 shares in Salem National Bank, Salem, cost.....	2000 00
Essex Railroad Bonds, par.....	700 00
Cash on hand as above.....	425 76
	$14,458 81
Funds reported previous year.....	13,747 23
Gain.....	711 58

EDWARD H. PAYSON, Treasurer.

SALEM, October, 1880.

SALEM, November 29th, 1880.

We have this day examined the account of the Treasurer of the Essex Agricultural Society, and find the same to be correctly cast and properly vouched, and the securities to be as shown therein.

JOS. H. PHIPPEN, } Auditors.
G. L. STREETER, }

OFFICERS OF THE SOCIETY.

FOR 1880-81.

PRESIDENT.

BENJAMIN P. WARE, of Marblehead.

VICE PRESIDENTS.

GEORGE B. LORING, of Salem.
J. J. H. GREGORY, of Marblehead.
THOS. C. THURLOW, of West Newbury.
JAMES P. KING, of Peabody.

HONORARY TRUSTEES.

JOSEPH HOW, of Methuen.
WILLIAM SUTTON, of Peabody.

SECRETARY.

CHARLES P. PRESTON, of Danvers.

TREASURER.

EDWARD H. PAYSON, of Salem.

TRUSTEES.

Francis R. Allen, Hamilton ;
Francis H. Appleton, Peabody ;
William H. Allen, Manchester ;
Henry Alley, Wenham ;
Chas. C. Blunt, Andover ;
O. S. Butler, Georgetown ;
Dudley Bradstreet, Topsfield ;
George B. Blodgette, Rowley ;
Doane Cogswell, Bradford ;
E. G. Dole, Salisbury ;
Alden C. Estes, Rockport ;
George W. Gage, Methuen ;
Charles H. Gould, Danvers ;
Benjamin V. Giles, Beverly ;
George L. Hawkes, Lynnfield ;
Samuel Hawkes, Saugus ;
J. Henry Hill, Amesbury ;
James T. Johnson, N. Andover;
Aaron Low, Essex;
H. F. Longfellow, Newbury ;
Charles H. Nichols, Merrimac ;
E. G. Nason, West Newbury ;
Asa T. Newhall, Lynn.
John P. Palmer, Swampscott;
*Thos. T. Paine, Marblehead ;
Moses A. Plummer, Newb'yp't ;
Charles Perley, Boxford ;
Eldred S. Parker, Groveland ;
E. P. Richardson, Lawrence ;
I. Albert Rogers, Ipswich ;
David Stiles, Middleton ;
Richard Webster, Haverhill ;
Horace C. Ware, Salem ;
Geo. M. Wonson, Gloucester.

---

* Deceased.

NEW MEMBERS—1880.

James J. Abbott, Andover;
Henry Bodge, Peabody;
Richard Breed, Lynn;
William K. Cole, N. Andover;
E. Dole Carr, West Newbury;
William Chase, Merrimac;
L. H. Chase, Lynn,
E. Loring Carleton, Middleton;
A. B. Clark, Peabody;
Edward S. Dole, Salisbury;
Nathaniel Dole, Newbury;
John M. Danforth, Lynnfield;
Byron Farnham, No. Andover;
Benj. Farnham, No. Andover;
George Foster, Lynn;
Chas. E. Frye, Lynn;
Edmund Gale, Amesbury;
Amos C. Hathaway, Marbleh'd;
Ballard Holt, Andover;
John E. Herrick, Peabody;
E. L. Hill, Lynn;
Wm. A. Jacobs, Danvers;
T. J. King, Newburyport;
B. G. Ladd, Bradford;
Geo. W. Ladd, Bradford;
Isaac N. Lane, West Newbury;
John T. Morse, Jr., Beverly;
Arthur W. Mansfield, Peabody;
Timothy Merritt, Lynn;
John Mudge, Lynn;
C. W. Mann, Methuen;
George C. Noyes, Lynn;
Ezekiel G. Nason, W. Newbury;
George T. Newhall, Lynn;
Justin Noyes, Newbury;
Otis Nichols, Lynn;
Nathan P. Proctor, Danvers;
Charles E. Parsons, Lynn;
John C. Phillips, Beverly;
J. H. Preble, Lynn;
G. K. Pervear, Lynn;
Frank P. Todd, Rowley;
Everett M. Twiss, Peabody;
Alfred M. Trask, Danvers;
Mrs. N. J. Warren, Swampscott;
H. C. Whippen, Lynn;
Lyman Wilkins, Middleton.

LIST OF PREMIUMS.

FAT CATTLE.

For oxen, Henry Gardner, Peabody, 1st premium,	$12 00
For oxen, Henry Gardner, Peabody, 2d premium,	10 00

BULLS.

John C. Phillips, Beverly, Jersey Bulls, 1st premium,	10 00
T. H. and O. Gowen, West Newbury, 2d premium,	6 00
D. A. Massey, Danvers, Ayshire, 7 months old, 1st premium,	6 00
S. F. Newman, Newbury, Ayrshire, under two years, 2d premium,	4 00

MILCH COWS.

Alfred M. Trask, Danvers, special premium,	25 00
J. W. Blodgett, Saugus, "Cows of any age or breed," 1st premium,	12 00
Alfred M. Trask, Danvers, do., 2d premium,	9 00
J. W. Blodgett, Saugus, Ayrshire, 1st premium,	12 00
J. W. Blodgett, Saugus, Ayrshire, 2d premium,	6 00
Geo. K. Pervear, Lynn, Jersey, 1st premium,	12 00
Marshall H. Abbott, Lynn, Jersey, 2d premium,	6 00
Otis Nichols, Lynn, grade, 1st premium,	12 00
James Cushing, Lynn, grade, 2d premium,	6 00

HERD OF MILCH COWS.

Charles J. Peabody, Topsfield, 1st premium,	18 00

HEIFERS.

J. W. Blodgett, Saugus, Ayshire heifer in milk, 1st premium,	12 00
Sidney F. Newman, Newbury, Ayshire heifer, 1 year old and upward, 1st premium,	6 00
D. A. Massey, Danvers, Ayrshire heifer, one year old and upwards, 2d premium,	4 00
D. A. Massey, Danvers, heifer calf, 2d premium,	3 00

John C. Phillips, Beverly, Jersey in milk, 1st premium,	12 00
John C. Phillips, Beverly, Jersey in Milk, 2d premium,	6 00
John C. Phillips, Beverly, Jersey, one year old and upwards, 1st premium,	6 00
John Green, Lynn, Jersey, one year old and upwards, 2d premium,	4 00
John C. Phillips, Beverly, Jersey calf, 1st premium,	5 00
R. S. Fay, Lynn, Jersey Calf, 2d premium,	3 00
Alfred M. Trask, Danvers, grade heifer in milk, 1st premium,	12 00
Jacob L. Farnham, North Andover, grade heifer in milk, 2nd premium,	6 00
J. K. Bancroft, Lynnfield, grade heifer, one year old and upward, 1st premium,	6 00
S. F. Newman, Newbury, do., one year old and upward, 2d premium,	4 00
Thomas P. Richardson, Lynn, grade heifer calf, 1st premium,	5 00
W. H. Jones, Lynn, grade heifer calf, 2d premium,	3 00

WORKING OXEN AND STEERS.

O. S. Carleton, Middleton, oxen, 1st premium,	12 00
R. T. Jaques, Newbury, 2d premium,	10 00
B. K. Farnham, North Andover, 3d premium,	8 00
J. L. Farnham, North Andover, steers, 1st premium,	10 00
R. T. Jaques, Newbury, 2d premium,	6 00

TOWN TEAM.

City of Lynn, team of horses, 1st premium,	30 00

STEERS.

Byron K. Farnham, North Andover, three year old steers, 1st premium,	8 00
Benjamin & Ralph Farnham, North Andover, 2 year old, 1st premium,	6 00
Byron K. Farnham, No. Andover, yearling, 1st premium,	5 00
Sidney F. Newman, Newbury, yearling, 2d premium,	4 00
Benj. & R. Farnham, No. Andover, steer calves, 1st premium,	4 00

STALLIONS.

H. M. George, Saugus, 5 year old, 1st premium,	15 00
H. M. George, Saugus, 2 year old, 1st premium,	10 00
A. C. Hill, Saugus, 3 year old, 2d premium,	6 00

BROOD MARES.

L. H. Chase, Lynn, 1st premium,	15 00

FAMILY HORSES.

T. W. Tyler, Lynn, 2d premium,	10 00
Goodwin Bros., Lawrence, 3d premium.	8 00

FARM AND DRAFT HORSES.

Jonas Rollins, Danvers, 1st premium,	15 00
J. W. Blodgett, Saugus, 2d premium,	12 00
Samuel Dane, Hamilton, 3d premium,	10 00
Joshua Roberts, Gloucester, 4th premium,	6 00

PAIRS OF DRAFT HORSES.

Oliver Stevens, North Andover, 1st premium,	15 00
E. P. Perley, Danvers, 2d premium,	10 00
J. J. H. Gregory, Marblehead, 3d premium,	5 00

COLTS.

Geo. B. Loring, Salem, Filley, four year old, 1st premium,	12 00
E. L. Hill, Lynn, colt, four year old, 2d premium,	8 00
A. C. Hill, Saugus, do., four year old, 3d premium,	5 00
Goodwin Bros., Lawrence, do., three year old, 1st premium,	10 00
John Gibney, Salem, do., three year old, 2d premium,	5 00
D. G. Todd, Rowley, do., two year old, 1st premium,	8 00
C. O. Beede, Lynn, do., one year old, 1st premium,	6 00
C. W. Bailey, do., one year old, 2d premium,	4 00

SWINE.

M. Bermingham, Salem, boar (large bone,) 1st premium,	10 00
Asa T. Newhall, Lynn, boar (large bone), 2d premium,	6 00
State Insane Hospital, S. S. Pratt, farmer, Danvers, breeding sow (large bone), 1st premium,	10 00
Elizabeth Saunders, Peabody, breeding sow (large bone), 2d premium,	6 00
Albert Berry, North Andover, weaned pigs (large bone), 1st premium,	10 00
Samuel Dane, Hamilton, weaned pigs, (large bone), 2d premium,	6 00
R. G. Buxton, Peabody, boar (small bone), 1st premium,	10 00
Alfred M. Trask, Danvers, boar (small bone), 2d premium,	6 00

Albert Berry, North Andover, breeding sow (small bone). 1st premium,	10 00
B. P. Ware, Marblehead, breeding sow (small bone) 2d premium,	6 00
B. P. Ware, Marblehead, weaned pigs, (small bone) 1st premium,	10 00
Danvers Hospital, S. S. Pratt, farmer, Danvers, weaned pigs (small bone), 2d premium,	6 00

PLOUGHING—SINGLE TEAM.

R. T. Jaques, 1st premium,	12 00

PLOUGHING—DOUBLE OX TEAM.

Jaques & Bray, Newbury, 1st premium,	12 00
Jacob L. Farnham, North Andover, 2d premium,	10 00
J. J. H. Gregory, Marblehead, 3d premium,	9 00
Hospital for Insane, S. S. Pratt, Farmer, Danvers, 4th premium,	8 00
B. H. Farnham, North Andover, gratuity,	5 00

PLOUGHING—WITH TWO HORSES.

Oliver Stevens, North Andover, 1st premium,	12 00
C. N. Maguire, West Newbury, 2d premium,	10 00
Samuel Dane, Hamilton, 3d premium,	8 00
R. S. Bray, Newbury, 4th premium,	6 00
Lawrence L. McKay, Hamilton, 5th premium,	4 00

PLOUGHING—WITH THREE OR MORE HORSES.

J. W. Blodgett, Saugus, 1st premium,	10 00

PLOUGHING WITH SWIVEL PLOUGH.

Carlton & Wilkins, Middleton, oxen, 1st premium,	12 00
Geo. B. Loring, Salem, oxen, 2d premium,	10 00
E. P. Perley, Danvers, horses, 1st premium,	10 00
Jonas Rollins, Danvers, horses, 2d premium,	6 00

FARMS.

Chas. W. Mann, Methuen, gratuity,	15 00

RECLAIMED MEADOW.

Alfred Green, Salisbury, 1st premium,	15 00
J. J. H. Gregory, Marblehead, 2d premium,	10 00

GRAIN CROPS.

John W. Blodgett, Saugus, rye crop, 1st premium,	10 00
Chas. W. Adams, Newbury, corn crop, 1st premium,	10 00
George W. Adams, Newbury, English hay, 1st premium,	8 00

ROOT CROPS.

J. J. H. Gregory, Marblehead, onion crop, 1st premium,	10 00
Frederick Burnham, Manchester, potato crop, 1st premium,	10 00
J. B. Knight, Newbury, squash crop, 1st premium,	10 00
J. W. Blodgett, Saugus, table beet crop, 1st premium,	10 00
J. J. H. Gregory, Marblehead cabbage crop, 1st premium,	10 00
J. W. Blodgett, Saugus, flat turnip crop, 1st premium,	10 00
Aaron Knowlton, Essex, mangold crop, 1st premium,	10 00
T. J. King, Newburyport, strawberry crop, 1st premium,	10 00
L. H. Bassett, No. Andover, blackberry crop, 1st premium,	10 00
George Gutterson, Andover, currant crop, 1st premium,	10 00

REPORTS OF COMMITTEES.

Joseph How, Methuen, report on New Winter Apples, 1st premium,	10 00
Benj. P. Ware, Marblehead, report on Farms, 2d premium,	8 00
Aaron Low, Essex, report on Root Crops, 3d premium,	6 00

ESSAYS.

Clara M. Nichols, Lynn, 3d premium,	6 00
Awarded by Committee on agricultural implements,	44 00
" " carriages,	35 00
" " dairy,	28 00
" " poultry,	60 00
" " bread, &c.,	28 00
" " fruits,	305 00
" " flowers,	55 00
" " vegetables,	150 00
" " articles manufactured from leather,	25 00
" " manufactures, &c.,	12 00
" " counterpanes, &c.,	25 75
" " fancy work, &c.,	67 00
" " children's work,	12,00
	$1,844 75

RECAPITULATION.

FARMS.

Amount awarded to Farm,		$15 00	
"	" Reclaiming Swamp Lands,	25 00	
"	" Ploughing,	144 00	
			$184 00

FARM STOCK.

Amount awarded to Fat Cattle,		22 00	
"	" Bulls,	26 00	
"	" Milch Cows,	100 00	
"	" Herd of Cows,	18 00	
"	" Heifers,	97 00	
"	" Working Oxen, &c.,	46 00	
"	" Town Teams,	30 00	
"	" Steers,	27 00	
"	" Stallions,	31 00	
"	" Brood Mares,	15 00	
"	" Family Horses,	18 00	
"	" Farm and Draft Horses,	43 00	
"	" Pairs of Draft Horses,	30 00	
"	" Colts,	58 00	
"	" Swine,	96 00	
"	" Poultry,	60 00	
			717 00

FARM PRODUCTS.

Amount awarded to Dairy,		28 00	
"	" Bread, &c.,	28 00	
"	" Fruits,	305 00	
"	" Flowers,	55 00	
"	" Vegetables,	150 00	
"	" Grain Crops,	28 00	
"	" Root Crops,	70 00	
"	" Small Fruits,	30 00	
			694 00
All other objects,			249 75
Total,			$1844 75

LIST OF MEMBERS

OF THE

Essex Agricultural Society.

1881.

NOTE.— Those marked with a * deceased since 1869; with † removed from the county. For names of members deceased previous to 1869, refer to list published that year.

ANDOVER.

Abbott, James J.
Abbott, Nathan F.
Abbott, Asa A.
Abbott, George A.
Abbott, Moses B.
Abbott, Hartwell B.
Abbott, John B.
*Abbott, Moody B.
Abbott, Stephen D.
*Abbott, Sylvester
Andrews, M. C.
*Ballard, Joshua
Bardwell, Simeon
Barnard, Edwin H.
Bailey, Moses A.
Bean, Samuel G.
Blunt, Charles C.
*Bond, William
Buchan, George
Callahan, Robert
Carter, Charles L.
Carruth, Isaac
†Chamberlain, N. Jr.
*Chandler, Joseph
Chandler, Joshua H.
Cheever, James O.
*Chickering, William
*Chipman, Degrass
*Clark, Hobart
Cummings, C. O.
Downing, J. J.
*Farnham, John C.
*Flint, John
Flint, John H.
Foster, George
Foster, George W.
Foster, Moses
*Foster, Thomas C.
Foster, George C.
*Gray, David
Gutterson, George
Harnden, Henry C.
Hazen, Nathan W.
Hidden, David I. C.
*Holt, Dean
Holt, E. F.
*Holt, Herman
Holt, Ballard
*Holt, H. P.
Jenkins, John B.
Jenkins, E. Kendall
Johnson, Francis H.
Johnson, S. K.
Kimball, Walter H.
Mason, George F.
*Merrill, William
Morton, Marcus
*Needham, Samuel
*Pettingill, Merrill
*Phelps, Herman
Pillsbury, Paul P.
Rea, Jasper
Robinson, Addison M.
Rogers, Fitzwilliam
Smith, Jas. B.
Smith, John L.
*Smith, Peter
Smith, Peter D.
Smith, Benj. F.
Upton, Edward C.
*Whittier, Nathaniel

AMESBURY,

Bailey, O. S.
*Bailey, Thomas
†Binney, William C.
Gale, Edmund
Hill, J. Henry
Huntington, B. F.
Jones, Philip
†Moore, Appleton
Morse, Daniel L.
*Morse, John S.
*Nichols, Stephen Jr.
Sawyer, Aaron

BEVERLY.

Appleton, Isaac
Avery, Mark B.
Baker, John I.
Baker, Stephens
Bell, John
Burnham, O. B.
Carter, John W.
*Chase, Samuel
Conelly, Stephen
Cressy, Joseph
Dodge, Aaron
Dodge, Andrew
Dodge, Benjamin N.
Dodge, Benjamin S.
Dodge, Joshua S.
Dodge, Richard
Dodge, Forest C.
Dodge, Walter F.
*Dodge, William E.
Edwards, Ephraim A.
*Edwards, Israel O.
Fiske, Alfred R.
Foster David L.
Foster, Henry W.
*Friend, Seth
Friend, Seth
Giles, Benjamin V.
Gould, Thomas
*Hathaway, John
Haven, Franklin
Herrick, Joseph H.
Hill, Hugh
Johnson, Geo. E.
Larcom, David
*Lord, Abraham
Lord, Cyrus W.
Lawrence, C. A.
Loring, Augustus P.
Lovett, Francis S.
Lummus, E. E.
*Marshall, Timothy
Mason, Alfred A.
Mason, Alphonso
Mason, George
Mason, Lyman
Meacom, John
Mitchell, John
Morse, John T.
Munsey, John G.
Paine, Charles C.
Phillips, John C.
Pitman, Mark
Porter, Adoniram
*Porter, John
†Porter, Robert
Raymond, John W.
†Safford, Nathaniel T.
*Sheldon, Jesse
Standley, Sam'l D. G.
*Scott, Benjamin
Stephens, Augustus
Trask, James W.
Walker, Lawson
Waters, Richard P.
†Waters, William C.
Wilson, Joseph

BOXFORD.

Anderson, Chas. R.
Andrew, Isaac W.
Barnes, B. Frank
Barnes, B. S.
Chadwick, Geo. W.
Cleveland, James P.
*Cleveland, Wm. N.
Cole, David M.
Cole, John K.
*Curtis, Francis
*Day, John
*Day, Isaac C.
Day, Mrs. John
*Day, Joshua T.
†Gould, Jacob
*Hale, Isaac
Hale, John
Harriman, Daniel F.
Herrick, Israel
Killam, Oliver P.
Kimball, Samuel
Ladd, John I.
†Palmer, Chas. Lane
Palmer, F. H.
Peabody, Stephen
Pearl, John M.
Pearl, John
Perley, Charles
Sawyer, Thomas
Wood, Enoch
Wood, John T.

BRADFORD.

Bradstreet, Justin E.
*Carlton, James T.
*Chadwick, Henry M.
Cogswell, Doane
Cogswell, George
Cogswell, William
Day, Albert J.
Day, Hiram
Day, Lafayette
Day, Royal
*Elliott, William
Ellis, John A.
Emerson, Charles B.
Haseltine, Thomas
Hazeltine, Chas.
*Hazeltine, William
Hilton, William
*Holt, H. E.
Hopkinson, Sam'l W.
Johnson, A. P.
Johnson, Charles G.
Johnson, Laburton
Kimball, Albert
Kimball, A. Laburton
*Kimball, David
Kimball, Henry G.
Kimball, Leverett
*Kimball, Seth
*Kimball, Sylvester
Kimball, William B.
Kimball, W. Eustace
Ladd, B. G.
Ladd, Geo. W.
Little, M. P. Mrs.
*Locke, Oliver
†Merrill, John F.
Morse, C. E.
O'Brien, John
Ordway, Alfred
*Ordway, Enoch F.
Ordway, G. W.
Ordway, Warren
Peabody, Frank
Peabody, Daniel
Perley, John
Perry, Samuel B.
*Sawyer, Samuel C.
Tewksbury, John B.
Thornton, William
Webster, Charles E.

DANVERS.

Abbott, L. L.
Allen, Henry C.
†Adams, Marshall C.
Bartlett, James A.
Berry, Allen A.
Berry, Eben G.
Batchelder, J. Q. A.
Bradstreet, Elijah
Blake, John A.
Brown, William H.
Barnard, Willis
Black, William
Boardman, I. P.
Brown, Amos
*Brown, Charles W.
Butler, J. C.
Clark, N. J.
*Cummings, Sam'l P.
†Devereux, George F.
Demsey, L. P.
Dodge, Elnathan
Dodge, Francis
*Dodge, William, Jr.
Eaton, Winslow W,
Fellows, Alfred
Fisher, Franklin W.
Faxon, George
Fowler, Augustus
Fowler, Samuel P.
Fuller, Solomon
*French, George W.
Gaffny, Cornelius
Gould, Charles H.
Grosvenor, David A.
Grout, John
†Holden, Seth
Hyde, Elisha G.
Hill, Edward L.
*Ham, Elias.
†Ham, Albert G.
Hood, R. B.
†Hatch, W. G.
†Hathaway, D. C.
Hood, Joseph E.
Hutchinson, Edward
Jacobs, Wm. A.
Kimball, Joel, Jr.
Kirby, Patrick
Lane, Benjamin T.
Langley, J. R.
Lawrie, James
Learoyd, A. P.
Lefavor, Mrs.
Legro, Edmund
Legro, John C. P.
Lewis, Samuel W.
Massey, Dudley A.
*Massey, S. D.
Martin, George B.
Martin, Walter F.
McCrillis, Ransom F.
*Merrill, Ernest S.
Merrill, Levi
Merrill, Walter S.
Moulton, Beverly S.
Mudge, Edwin

Mudge, Augustus
†Murphy, Patrick
Nichols, Andrew
Newhall, Benj. E.
Nourse, Samuel W.
Page, Nathan, Jr.
Patch, Abraham, Jr.
Peart, William B.
Perley, A. P.
*Perley, Frederick
Perkins, Henry A.
Perley, Edward P.
Perry, James M.
Pettingill, David A.
Peabody, George H.
Pillsbury, H. H.
Pope, Ira P.
Porter, Benjamin F.
Pratt, Amos
Preston, Charles P.
*Preston, John
*Preston, John S.
*Preston, Samuel
Prince, Amos
Putnam, Ansel W.
Putnam, Charles O.
*Putnam, Eben
Putnam, Edwin F.
Putnam, Francis P.
Putnam, Israel H.
Putnam, Joseph C.
Putnam, J. A.
Putnam, Joel
Putnam, Moses W.
Putnam, Orrin
Putnam, Otis F.
*Putnam, Rufus
Pratt, George
Pratt, Samuel S.
Porter, John W.
Pope, Daniel P.
Proctor, Nathan P.
Richardson, James
Richards, Daniel
Richards, C. S.
Richards, Geo. D.
Rollins, Jonas
*Ropes, Joseph W.
Rice, Charles B.
Sears, John A.
Silvester, Joshua
Spaulding, Sam'l W.
Swan, Sylvanus B.
Swinerton, John
Smart, John L.
Swazey, E.
Spring, Jacob E.
*Tapley, Charles
Tapley, George
*Tapley, Gilbert
Tapley, Gilbert A.
*Tapley, Nathan
Trask, Alfred M.
*Tufts, Benjamin F.
Upton, Franklin W.
Verry, Augustus
Waite, Peter
Walcott, Wm. H.
Waldron, E. T.
Wallis, Samuel
Warren, Aaron W.
*Warren, Jonas
Weston, Wm. L.
White, Amos A.
White, Henry A.
*Wilkins, Joel
Woodis, Alden B.
Whipple, John F.
Wilkins, Fred'k A.

ESSEX.

Andrews, Elias
*Andrews, Elihu
Andrews, Joseph
Andrews, Miles S.
Burnham, D. Brainard
Burnam, Washington
Burnham, Wm. Howe
*Choate, David
Choate, Rufus
Cogswell, Chas. B.
Dodge, Grover
Haskell, David L.
Haskell, George
Knowlton, Aaron
Knowlton, David
Knowlton, Moses
Knowlton, Herbert A.
Knowlton, Perry B.
Lee, Edward K.
Low, Aaron
Low, Josiah
Lufkin, A. E.
McDonald, Daniel
Mears, Wm. H.
Perkins, John
Story, Andrew
Story, Ephraim

GEORGETOWN.

*Adams, George E.
Bateman, A. P.
*Boynton, George W.
Butler, Oliver S.
Chapman, Jonathan
Dole, Moody S.
*Dole, Richmond
Harriman, Hiram N.
Hoyt, John A.
Illsley, I. Adams
*Jewett, Jacob F.
*Jewett, Robert
Lambert, Nathaniel
Little, Samuel
Lovering, John H.
Moulton, Daniel E.
*Nelson, Charles
Nelson, Sherman
Nelson, Solomon
Nelson, William
Osgood, Stephen
Pettingill, Henry
Pillsbury, J.
Poor, Samuel T.
Preston, John
*Sanborn, George W.
Spofford, Sumner P.
Tenney, George J.
Tenney, Gorham D.
Tenney, Milton G.
Tenney, Moses
Tenney, Orlando B.
Tenney, Richard
Wheeler, William S.
*Wildes, Green
*Wilson, Isaac

GLOUCESTER.

Atkinson, John
Babson, Daniel T.
Babson, Fitz J.
Babson, Horatio
Babson, John J.
Barrett, Charles P.
Bradford, George R.
Bray, Aaron W.
Brown, Edward H.
Burnham, A. M.
Burnham, H. A.
Burnham, S. A.
Butler, Benjamin F.
Calef, John C.
Campbell, C. H.
Carter, John S.
Carter, Sherman J.
Clark, John
Cole, Israel H.
Conant, Thomas
Cook, Benjamin F.
Corliss, Benjamin H.
Corliss, John
*Cressy, Curtis C.
Cronin, John
Dale, Eben, Jr,
Davis, James
Davis, William P.
Day, Abraham
Dennin, George
Dennison, C. W.
Dodd, Stephen
Dolliver, John H.
Dolliver, William C.
Dolliver, William P.
*Dyer, J. Franklin
Emanuel, Henry
Fears, Robert
Fears, Robert R.
Ferguson, Thomas B.
Foster, Jeremiah
Friend, Elbridge G.
Garland, Joseph
Gilbert, Addison
Griffin, Bennett
Griswold, A.
Grover, Charles E.
Harvey, Alonzo F.
Haskell, H. C. L.
*Haskell, Thomas
Haskell, William H.
Herrick, Gardner W.
*Hough, Benjamin K.
*Hoyt, Edward C.
James, George
James, Samuel
Knowles, Thomas J.
Lane, Andrew
Lane, George
Lancaster, T. S.
Lawrence, R. C.
*Lindberg, A. F.
Loring, Francis M.
Lovett, John H.
Low, David W.
*Low, Gorham P.
Marr, Chester, Jr.
Mayo, Israel C.
Mayo, Josiah, Jr.
Merchant, E. W.
Norwood, George
Parsons, William, 2d
Parsons, W. Frank
Patch, Isaac
Pattillo, Alexander
*Pearce, Edward H.
*Perrin, Henry S.
*Perrin, William H.
Pew, William A.
Phillips, N. H.
Plummer, David

Presson, David S.
Price, Augustus E.
Proctor, Joseph O.
Proctor, Wilbur F.
Ricker, Richard W.
Roberts, Joshua
Rogers, Allen
Rogers, John S.
Rogers, John S. E.
Rust, William P.
Sanford, H. G.
Sawyer, Samuel E.
Shepard, Joseph C.
*Smith, Benjamin H.
Somes, John E.
Stacey, Eli F.
Stacey, John H.
Stanwood, Barnard
*Staten, Edward
*Stevens, Zachariah
Story, Cyrus
Thompson, Charles P.
Tibbetts, Robert A.
Todd, John
Webster, Nathaniel
Wetherell, M. L.
Wilson, John J.
Witham, Addison
Wonson, Augustus H.
Wonson, F. G.
Wonson, George M.
Wonson, J. W.

GROVELAND.

Atwood, Daniel
Atwood, Moses P.
Balch, Thomas H.
*Burbank, John
*Clark, Elijah
Curtis, Edwin T.
†Day, Isaac C.
Fegan, Henry C.
George, Edwin B.
Hardy, Ira
Harrington, Edward
Harriman, Abel S.
Hopkinson, W. H.
*Kimball, Charles
Ladd, Nathaniel E.
Longfellow, Samuel
*Ordway, Leverett S.
*Ordway, Moody
*Parker, Benjamin
Parker, Eldred S.
Pemberton, L. K.
Savary, Charles G.
Savary, Charles P.
*Spofford, Jeremiah
Spofford, Morris
Stickney, Abel
Stickney, Charles
*Stickney, Daniel H.
Stiles, Charles F.
Walker, George S.
Wardwell, Z. C.
Woodman, Ira S.

HAMILTON.

Abbott, Joseph B.
Allen, Francis R.
*Brown, Jacob
Brown, William A.
Creamer, George G.
Dane, Ephraim A.
*Dane, Francis
*Dane, George
Dane, George E. F.
Dane, John, Jr.
Dane, Samuel
Dane, William A.
Dane, Sylvester
Dodge, Albert W.
*Dodge, Allen W.
Dodge, Emerson P.
Dodge, George B.
Dunnels, Ira A.
Ellis, George W.
Gregory, Samuel B.
Kimball, Isaac W.
Knowlton, Isaac
Knowlton, Isaac F.
Knowlton, Joseph
Lamson, Jarvis
*Morgan, Luther S.
Norris, George
Patch, Mrs. Oliver
Porter, Dudley H.
Rankin, Eli C.
Rankin, George C.
Robinson, E. P.
Safford, Daniel E.
Smith, Alvin
Smith, John
*Whittredge, John
Whipple, Em. A.
Winslow, Aaron
Winslow, G. W.

HAVERHILL.

Berry, J. M.
*Bartlett, James A.
Bodwell, Stephen
Brickett, Barnard
Brickett, Daniel
*Brickett, Daniel H.
Brickett, Franklin
Butters, Charles
Caldwell, William
*Carlton, John
Carlton, Samuel
Carlton, William B.
Carlton, Nathaniel
Chase, Abel W.
Chase, C. W.
Cheever, H. W.
*Clark, William P.
†Coburn, A. M.
†Coffin, George
Cook, Justin T.
Corliss, Charles
Cummings, Henry
Currier, Samuel M.
*Cushman, R. P.
Davis, George W.
Davis, Phineas E.
Dewhurst, James
*Dunbar, Charles H.
Duncan, George W.
Eaton, Harrison
Elliott, Samuel
Elliott, Samuel H.
Emerson, Albert
Emery, Benjamin E.
*Emery, M. G. J.
Farnsworth, J. H.
†Farrar, Joseph E.
Fellows, Samuel
Fitts, D. F.
Flanders, Daniel D.
†Fletcher, Edmund
*Frothingham, E. G.
Gale, John E.
Gale, James E.
Gage, Edmund
*Gardner, John
Goodwin, Rufus
*George, M. D.
*Gile, James F.
Gilman, John P.
Goodrich, T. J.
Grieves, J.
Hale, Samuel
*Harding, Thomas
*Harmon, David P.
Haseltine, Amos, Jr.
*Haseltine, Hazen
Holt, Charles
Hooke, Daniel
Howe, Moses
*Howe, Nathaniel S.
*Hoyt, George H.
*Hoyt, Humphrey
Hunking, C. D.
Ingalls, E. T.
Jeffers, William
*Keeley, John
*Kittredge, Alfred
Lackey, Andrew
*Lee, George W.
†Little, Edmund B.
Little, J. G. S.
Marsh, John J.
Merrill, William
Mitchell, E.
Mitchell, Seth K.
Moody, H. L.
Morse, John
Morse, S. E.
Merrill, Gyles
Nichols, James R.
†Nichols, John A.
Nichols, John B.
*Noyes, James
Noyes, Johnson
†Oberton, W. W. S.
Ordway, Joshua H.
*Patch, Paul D.
*Plummer, Hiram
Porter, Dudley
*Porter, Ebenezer
Randall, John P.
Richards, William B.
Richardson, John B.
Ridgway, Joseph N.
*Roberts, Stephen
Robinson, Edwin
Savary, Robert
Sleeper, Sherburne C.
*Slocum, Rufus
Smiley, James V.
*Smith, Jesse
Saunders, A C.
Saunders, Thomas
*Spiller, J. B.
Stewart, John
Swett, Jackson B.
Taylor, Levi
Taylor, Martin
Taylor, Oliver
Titcomb, Benaiah
*Tompkins, Christ'r
Towle, Samuel K.
†Turner, James
Wadleigh, Levi C.
Wales, Herbert E.
*Webster, David

Webster, Ebenezer
Webster, E. F.
*Webster, Nathan
Webster, Richard
†Welch, Ezra B.
West, H. K.
West, James F.
West, Thomas
Wheeler, Allison
White, James D.
Whittier, Alvah
*Whittier, Leonard
Whittier, Warner R.
Winchell, James H.
*Wingate, Moses

IPSWICH.

*Andrews, David
Andrews, Theodore
Appleton, Francis R.
*Appleton, B. D.
Appleton, Daniel F.
Baker, S. N., Jr.
Bond, James W.
*Bray, Frederick
*Brown, Aaron F.
Brown, John
Brown, Manasseh
Brown, William G.
Caldwell, Abraham
Clark, Erastus
Cogswell, Ebenezer
*Cogswell, William
Conant, Gilbert
*Dodge, Richard T.
Fall, Tristram B.
†Farley, Alfred M.
*Farley, Joseph
†Farley, Robert, Jr.
Fellows, Alonzo B.
Gould, John J.
*Grant, John
Grant, Joshua B.
Green, George H.
Haskell, George
Hobbs, John
Hodgdon, George
Hodgkins, Augustine
Horton, Joseph
Hunt, Samuel
Hurd, Y. G.
Jewett, Israel K.
Jordan, Robert, Mrs.
*Kimball, Charles
Kimball, Daniel
Kinsman, Joseph F.
Kinsman, William H.
†Locke, Calvin
*Low, Thomas
McFarland, L.
Marshall, Joseph
†Merrill, Ezekiel O.
*Mitchell, Frederick
Norwood, C. J.
Perkins, Isaac E. B.
Perley, David T.
*Potter, Asa T.
Rogers, Isaiah A.
Ross, Joseph
Shatswell, Nathaniel
Smith, Webster
Stone, Augustine
Story, Alden
*Tappan, Amos
Treadwell, William
Underhill, J. C.
Wade, Asa
†Wade, William F.
*Waite, Abraham D.
Whittier, Maynard
*Worcester, Ira

LAWRENCE.

Ames, M. B.
*Ambrose, Nathaniel
Bodwell, Asa M.
†Bryant, Oliver
Cabot, George D.
Currier, Eben B.
Currier, J. Merrill
*Decker, J. M.
Drew, J. D.
Durant, Adolphus
Durant, W. A.
Emery, Levi
Fiske, E. A.
Flynn, Edward
French, A. J.
Gile, W. F.
Gilman, Frederick
Goodwin, John
Halley, T. D.
Harmon, Nathan W.
Herrick, H. G.
Herrick, James D.
Hills, George
Hood, Gilbert E.
*Howard, J. B. D.
Holt, Lewis G.
†Kimball, Josiah
†Kimball, Wm. M.
Keleher, W. A.
Lamb, William D.

*Mallard, L. Mrs.
McAllister, J. G.
Merrill, George S.
Page, E. F.
Rollins, John R.
Russell, W. A.
Russell, George W.
Robinson, P. B.
Richardson, E. P.
Saunders, Daniel
*Stevens, William
Shattuck, Charles
Small, Henry
Vietor, F. M.
Warren, Albert
*Webster, Charles
Wright, W. H. P.

LYNN.

*Allen, Jacob A.
Baker, Ezra
Barker, John G.
Batchelder, John
Bates, Wallace
Beede, C. O.
Breed, Andrews
Breed, Henry A.
*Breed, Nehemiah, Jr.
Breed, Richard
*Brown, Ira P.
Chase, L. H.
Chase, Nathan D.
Chamberlain, Wm. D.
†Coggeshall, J. H.
*Collins, Ezra
Cross, Alfred
Davis, Edward S.
Emery, George E.
Fay, William P.
Farrar, Jos. E.
Foster, George
Frye, Charles E.
Graves, Samuel
Harris, N. S.
Hawkes, Nathan M.
*Healy, Mark
Hill, E. L.
Hovey, Rufus P.
*Keene, George W.
Kimball, Rufus
King, W. P.
Marsh, George E.
Merrill, Samuel A.
Merrill, E. H.
Merritt, Charles
Merritt, Timothy
Mudge, John
Neal, Peter M.
Newhall, Asa T.
Newhall, G. A.
Newhall, Hiram L.
Newhall, George T.
Nichols, Otis
Nichols, Thos. P.
Norris, George, Jr.
Noyes, Geo. C.
*Nye, James M.
Oliver, John E.
*Osborn, William
†Osborn, William H.
Parsons, Charles E.
Pervear, G. K.
Pervear, H. A.
Potter, Edward P.
Preble, J. H.
Putnam, F. W.
Rankin, John D.
Rhoades, Jacob
Roney, Simon J.
*Saunderson, Jos. N.
Shorey, John L.
Shorey, George L.
Spinney, William N.
Sawyer, J. A. J.
Tyler, Thaddeus, Jr.
Usher, Roland G.
Whippen, H. C.
†Wyman, Isaac

LYNNFIELD.

Bancroft, J. K.
Brown, Joseph
*Danforth, John
Danforth, John M.
*Emerson, D. P.
*Emerson, Hubbard
Hawkes, George L.
Herrick, George E.
Mansfield, Andrew
*Newhall, Josiah
Perkins, John
Perkins, John H.
*Richardson, Chas.
Smith, Henry E.
†Smith, Joseph
†Symonds, George W.

MARBLEHEAD.

Alley, Amos P.
Alley, James E.
Alley, Reuben
Alley, Franklin
Appleton, Thomas
†Childs, Addison
Childs, Caleb
Cloutman, Henry
Dennis, John
Gregory, J. J. H.
Hathaway, Amos C.
Hathaway, Joseph B.
Hathaway, Seth W.
†Millett, Joseph
Nutting, John
*Paine, Thomas T.
Paine, Thomas W.
Robinson, Frederick
*Stone, John
Ware, Benjamin P.
Ware, Horace
Winslow, Henry B.
*Wyman, Israel
*Wyman, Luke

MANCHESTER.

Allen, Luther
Allen, Wm. H.
Burnham, Frederick
†Chase, Joseph S.
Cheever, John H.
Cheever, William M.
Coolidge, T. Jefferson
Fields, James T.
*Fitz, William F.
Friend, Daniel W.
*Gentlee, Thomas P.
Hildreth, John D.
Jewett, Alfred W.
Knight Henry
Knight, John, Jr.
Lee, Allen
*Lee, John
Price, John
Rabardy, Julius F.
Smith, A. W.
Sturgis, Russell, Jr.
*Tappan, Benjamin
*Tappan, Ebenezer
Tappan, Israel F.
*Tappan, Lewis N.

MERRIMAC.

Chase, William
Currier, J. M.
Evans, Benjamin F.
*Evans, John
Goodwin, A. E.
*Gunnison, William
Haskell, Wm. H.
Loud, L. C.
Nichols, Chas. H.
Patten, T. B.
Sargent, J. B.
*Sargent, Orlando
Sargent, Patten
Sargent, P. Willis
Sawyer, Thomas C.
Tewksbury, D. M.

METHUEN.

*Barker, J. B.
*Barker, Stephen
Bradley, Geo. B.
*Bradley, Leverett
Bradley, Frank J.
Buswell, Jos. E.
Butters, W. H.
Butters, George W.
Currier, Daniel
*Davis, John
*Dow, Lorenzo
Dow, Virgil
Emerson, Jacob, Jr.
Frederick, John W.
Gage, George W.
Gutterson, B. J.
Goss, Charles E.
Herrick, Fred S. C.
†Hicok, S. S.
*How, Christopher
How, Joseph
How, Joseph S.
Ingalls, Charles
*Ingalls, Joseph F.
*Low, John
Mann, C. W.
Morrison, D. T.
*Morse, Jonathan
Nevins, David
Noyes, David W.
Patterson, D. H.
Phippen, G. S.
*Rollins, Amos C.
*Russ, John
Sargent, S. C.
Sleeper, William C.
Thurlow, J. E.
Tozier, C. L.
†Welch, John

MIDDLETON.

*Berry, Jonathan
Berry, William
Carleton, O. Loring
Currier, George A.
Flint, James
Hutchinson, J. A.
Noyes, A. P,
Phelps, William A.
Stiles, David
Stiles, Farnham
Stiles, Farnham, Mrs.
Stiles, Hiram A.
Wellman, John R.
Wilkins, Lyman

NAHANT.

Goodale, Byron

NEWBURYPORT.

Adams, Philip D.
Adams, J. Quincy
Adams, Rufus,
*Akerman, John
Akerman, Joseph
Ashby, William
Balch, John H.
Ballou, C. N.
Bartlett, T. K.
Batchelder, Daniel C.
Battell, Elbridge
Boardman, Isaac H.
Brewster, William H.
Bricher, William
*Brown, David F.
Canney, Hiram
Capers, Thomas
*Coffin, Frederick J.
Colby, George J. L.
Colby, George W.
Cole, Augustus K.
*Colman, Daniel T.
Colman, James C.
Colman, William T.
*Cushing, Caleb
Cutter, Eben P.
*Davis, Benjamin
Delano, Otis
*Dyer, J. R.
*French, Curtis
Gale, Stephen M.
George, George
Griffin, Eliphalet
*Hale, Isaac, Jr.
Hale, Joshua
*Hale, Josiah L.
Hamlet, Daniel
Hart, James S.
*Horton, Daniel
Huff, William
Huse, William H.
Ireland, Charles H.
Jackman, George W.
*Johnson, William P.
†Kelley, E. G.
King, T. J.
Little, John G.
*Little, Moses S.
Lunt, Charles
*Lunt, Micajah
*Marston, Stephen W.
Merrill, Enoch
*Merrill, Samuel, Jr.
Morrison, Daniel T.
Morse, James M.
Morse, Joseph B.
Mosely, Edward A.
Mosely, Edward S.
Moulton, Henry W.
Moulton, Joseph
Nelson, David O., Jr.
Newhall, Asa T.
*Newhall, Joshua L.
Northend, E. T.
Noyes, William, Jr.
Ordway, Parsons
*Page, John T.
*Pearson, J. P.
Perley, R. M.
*Pettingell, Moses
Plummer, Moses A.
Plummer, Wm. C.
*Remick, John E.
*Robinson, J. D.
Shoof, Henry
Smith, David
Smith, Edmund
Smith, Joseph B.
Smith, Eunice L.
Smith, Robert A.
Stanley, B. F.
Stanley, J. C.
†Stearns, Edwin
*Stone, Jacob
Sumner, John
Thurlow, William
Titcomb, Albert
Tilton, Enoch
Tozer, Hiram
Titcomb, Paul
Toppan, Edward S.
*Williams, Robert
Winkley, J. Otis
Winkley, Paul T.
Winkley, Paul T., Jr.
Wood, David
Young, Hiram

NEWBURY.

Adams, Charles
Adams, Charles W.
*Adams, John C.
Adams, George W.
*Adams, John J.
Allen, John W.
Bray, Richard S.
Bray, George W.
Boynton, Charles
Caldwell, David S.
Colman, Moses
Dole, Nathaniel
Goodrich, Wm. F.
Howard, Horatio M.
Illsley, Paul M.
Jaques, Richard
Jaques, Richard T.
Jaques, William
Jones, William
Kent, John N.
*Kent, Joshua N.
Knight, Joseph
Knight, J. B.
Kent, Otis L.
Kent, Edward
*Langley, William C.
Little, E. C.
Little, E. F.
*Little, Edward H.
Little, Joseph
Little, Nathaniel, Jr.
*Little, Silas
Little, Stephen W.
*Little, Tristram
Little, William
Longfellow, H. F.
Longfellow, J.
Longfellow, J. Mrs.
Lucy, Gideon R.
Lunt, Charles M.
*Lunt, J. Austin
*Lunt, Joseph
Moody, N. W.
Mann, Otis
Newman, Sidney F.
Noyes, Justin
Noyes, H. P.
Noyes, James
Noyes, Luther
Noyes, Moses K.
Perkins, Charles L.
Perkins, W. W.
Plummer, Daniel, Jr.
Plummer, G. H.
*Plummer, Greenleaf
*Poole, B. P. Mrs.
Randall, G. A.
Rogers, Abial
Rolfe, Joseph N.
Tenney, H. L.
Tenney, Daniel G.
Woods, C. W.

NORTH ANDOVER.

Adams, Edward
†Appleton, S. F.
Bailey, Charles P.
*Berry, Jacob
Berry, Albert
Blake, J. P.
Bodwell, S. B.
Butterfield, Chas. A.
Carlton, Daniel
Carlton, Daniel A.
Carlton, Joseph
Crosby, Josiah
Chever, William J.
Cole, Wm. Kimball
Davis, George G.
Davis, George E.
Davis, George L.
Dale, William J.
Dale, William J., Jr.
Farnham, Benjamin
Farnham, B. H.
Farnham, Byron K.
Farnham, Jacob
Farnham, J. L.
Foster, J. Frank
Foster, John P.
*Foster, J. Prescott
*Foster, William
†Foster, Samuel
Foster, Orrin
*French, George
French, J. D. W.
Fuller, Abijah P.
*Gage, John C.
Goodhue, Hiram P.
*Green, Arthur M.
Gardner, D. F.
Greene, E. W.
Goodwin, John O.
Hill, Samuel B.
†Jaquith, Chris'r P.
Jenkins, Benjamin F.
Jenkins, Milon S.
Johnson, Theron
Johnson, James T.
Johnson, Charles F.
*Kittredge, Joseph
Loring, George B. Jr.
Manion, John
Montgomery, Jas. A.
Nason, James
Osgood, Isaac F.
Peters, Nathaniel
Peters, William
Phelps, W. W.
Poor, James
*Poore, Matthew

Reynolds, James H.
Reynolds, Wm. B.
Riley, Henry
†Slade, Jarvis
*Spaulding, Amos
Stevens, Moses T.
Stevens, Oliver
*Shattuck, Thomas C.
Sutton, Eben
Symonds, Frederick
†Wardwell, Orrin
*Weed, Dan
Wilson, Abiel
Wiel, Louis
Wardwell, T. O.
Wiley, John A.

PEABODY.

Abbott, Alfred A.
Allen, Lewis
Appleton, Francis H.
*Ayer, Hazen
Bancroft, Sidney C.
Barrett, E. P.
Buxton, Henry V.
*Blake, Walter F.
Brown, W. H.
*Basford, P. R.
Batchelder, Mal'hi F.
Blaney, Stephen
Bodge, Horatio
Bodge, Henry
Buxton, Daniel, Jr.
Buxton, Joshua
Buxton, Robert G.
Clark, A. B.
*Clement, John B.
Colcord, J. L.
*Cook, Henry
Curtis, Andrew
*Davis, Mark
Dole, Wm. F.
Emerton, C. F.
Fairfield, Joseph
Farwell, Edwin C.
Foster, Ira
Gardner, Henry
Goodale, Jacob O.
Goodale, J. P.
†Gunnison, Elisha
Hardy, Isaac
Hills, Benjamin M.
†Hoyt, Joseph
Herrick, John E.
*Hubbard, John L.
Hubbard, A. J.
Huntington, Benj.
Hutchinson, Samuel
Hutchinson, C. K.
Jacobs, Edward W.
*King, Amos
*King, Eben
*King, Henry A.
King, J. Augustus
King, James P.
King, Jonathan
King, Perley
Linehan, John
Little, William H.
†Low, Caleb
Marsh, Fred
Mansfield, E.
Mansfield, Arthur Wm.
Marsh, Frank
Marsh, James
*Marsh, John
*Marsh, Philip
*Merrill, Wingate
*Messer, F. B.
Needham, George A.
Needham, Joseph S.
Newhall, Orlando F.
*Osborn, Philip L.
Osborne, Abraham C.
Osborne, David
*Osborne, Kendall
*Osgood, Joseph
Pepper, George W.
*Pierson, A. L.
*Poole, Fitch
*Poor, Eben S.
*Poor, Henry
†Potter, William
*Preston, Moses
*Proctor, Abel
*Proctor, John W.
*Proctor, Thorndike
Richardson, W. B.
Saltonstall, Henry
*Sanger, Abner
*Sawyer, Asa
*Shackley, Moses A.
Southwick, Sumner
Stevens, John V.
Sutton, William
Sweet, Samuel
Taylor, George W.
Thomas, Josiah B.
Twiss, Everett M.
*Upton, Eben S.
Upton, Stephen
Viles, Bowman
Walcott, John G.
Wallis, David B.
Walton, George D.
Ward, Winsor M.
*Wheeler, Benjamin
Wheeler, Benjamin S.

ROCKPORT.

Blatchford, Eben
Estes, Alden C.
*Haskell, Benjamin
Hodgkins, John B.
Lane, Andrew
Lowe, Mrs. Martha J.
Lowe, William
Manning, James
Manning, John J.
Manning, William N.
Marshall, John W.
Patch, William H.
*Pool, Ebenezer
*Rowe, Ebenezer
*Rowe, Jabez
Smith, Allen
Smith, Allen Jr.
Smith, Beman C.
*Smith, David
York, Nath'l S.

ROWLEY.

Blodgette, George B.
Cressey, John S.
Dole, Charles
Dummer, Nath'l N.
Foss, Joshua
Hale, Clara A.
*Hale, Daniel J.
Hale, Joseph
Hale, Thomas
Lambert, Mary G.
Mighill, Charles P.
*Payson, Moses P.
Pike, John
Prime, Daniel B.
Potter, Edward H.
*Proctor, George
Smith, George J.
Todd, Daniel G.
Todd, John F.
Todd, Frank P.

SALEM.

Andrews, Randal
Andrews, Samuel P.
Almy, James F.
Abbott, Nathaniel
Barton, Gardner
*Barton, William C.
*Bowdoin, Williard L.
Brookhouse, Robert
Bermingham, M.
Curwen, James B.
Chamberlain, James
*Chase, Stephen A.
Curwen, Samuel H.
Clark, Charles S.
Chase, William
Collins, William
*Cressy, Josiah P.
*Cross, John D.
Daland, John
Endicott, William C.
Endicott, William P.
Felt, John
Fellows, Israel
*Ferguson, Jos. B.
Foote, Caleb
Foster, Joseph C.
Foster, William H.
Foster, William J.
Fiske, Joseph E.
Goodhue, William P.
Gray, Benjamin A.
Gibney, George H.
Gibney, John
*Gardner, D. B.
Hathaway, John
*Huntington, Asahel
Hale, Henry
Hale, Henry A.
Hale, Joseph S.
Horton, N. A.
Ives, John M.
Ives, John S.
*Ives, William
Jones, Samuel G.
Jackson, Eben
*Kimball, James
Kinsman, John
Kemble, Arthur
*Lee, John C.
Lord, William
Loring, George B.
Lander, Wm. A.
Lyford, Francis W.
Mack, William
*Maloon, William
Manning, Robert
Merritt, David
Messervey, Wm. S.
*Metcalf, Benjamin G.
*Milton, T. Payson
Morse, Ebenezer H.
Newhall, Benjamin S.
Newcomb, Caleb
†Nichols, George, Jr.
Northend, William D.
Noyes, E. K.
Oliver, H. K.
Oliver, Samuel C.
*O'Shea, M.
Peabody, John P.
*Peirson, Edward B.
Perkins, E. R.
*Perkins, J. C.

Phillips, Williard P.
Phippen, George D.
Pickering, John
Potter, Daniel
*Proctor, William
Pulsifer, Joseph
Pettingill, L. D.
Pettingill, S. J.
Pickering, Wm. Jr.
Pickering, Benjamin
Page, John G.
*Roberts, William
†Robinson, J. A.
Rogers, A. D.
Rogers, George W.
*Rogers, Richard S.
*Russell, John L.
*Reynolds, Moses C.
Reynolds, Henry E.
Ropes, John C.
Saunders, Robert J.
Saunders, William
Smith, Andrew
*Smith, Caleb
Shreve, O. B.
Stimpson, James C.
Story, Augustus
Stowe, Volney C.
Streeter, Gilbert L.
Ware, Horace
Ware, Horace C.
Wentzell, David
Wheatland, Henry
*Winkley, Enoch
†Wyman, Rufus
White, Frank
Waters, David P.

SAUGUS.

Blodgett, J. W.
George, Henry M.
*Hatch, Anthony
Houghton, T. O. W.
Hawkes, Samuel
Newhall, Herbert B.
Newhall, Joseph
Noble, William
Penney, George H.
Robinson, E. P.
*Sweetser, Geo. H.
Whitehead, Joseph

SALISBURY.

*Ayer, James H. B.
*Clark, Thomas J.
*Currier, Jacob
*Colby, J. Harlow
Currier, W. H. B.
Dole, Edward G.
*French, Moses
Green, Alfred
*Gale, Josiah B.
Pendergast, J. F.
*Pray, Rufus.

SWAMPSCOTT.

Crosman, S. F.
Holden, Philander
Mudge, E. R.
Palmer, John P.
Phillips, J. F.
*Pitman, Samuel C.
Rowe, Allen
Stetson, Charles A.
Washburn, John
Warren, David
Warren, Mrs. N. J.

TOPSFIELD.

*Adams, B. P.
*Balch, Abraham
Batchelder, Ezra
Billings, Augustus T.
Bradstreet, Dudley
*Clark, David
*Cleveland, John
*Elliott, Israel D.
*Emerson, T. M. P.
*Gould, Ariel H.
Herrick, Charles
Hood, S. D.
*Hubbard, William
Lamson, J. Arthur
Leach, Thomas K.
Manning, James
*Munday, William
*Merriam, Sidney A.
Merriam, Arthur M.
Peabody, Charles J.
Perkins, Moses B.
Pierce, T. W.
Poole, Benjamin
*Rea, John Jr.
Stanwood, Jos. E.
Ward, Richard
Wildes Moses
Wilson, James
Woodbury, Isaac M.

WENHAM.

Alley, Henry
*Batchelder, Joseph
Cole, Zachariah
Dodge, Richard F.
*Dodge, Andrew
*Dodge, Ezra
*Dodge, George A.
Dodge, George F.
*Dodge, Rufus A.
Dodge, William P.
Edwards, Francis R.
Gould, Amos
*Hadley, Franklin
Hobbs, A. F.
Hobbs, Henry
Kavanagh, J.
Morgan, William B.
Peabody, George W.
†Parsons, George W.
Patch, Henry
Pingree, Wm. G.
*Porter, William
Perkins, Nathaniel P.
Tilton, George H.
Waters, Robert H.

WEST NEWBURY.

Bailey, William P.
Bradley, C. S.
*Bailey, Uriah
Boynton, Eben M.
Brown, Hayden
*Brown, Osgood
Brown, Robert L.
*Carr, George W.
*Carr, James
Carr, E. Dole
*Carr, Moses
Carr, Samuel
Chase, Samuel S.
Follansbee, B. A.
Flook, Geo. L.
Goodridge, David L.
Goodridge, H. M.
Goodridge, Joseph
*Goodwin, Thos. C.
*Gordon, Joseph Z.
Gowen, Oscar
*Gowen, Ezekiel
*Griffin, B. F. S.
Hosam, George
Jacques, Romulus
*Little, Edmund
Little, Otis
Lane, Isaac N.
Merrill, Elbridge
Merrill, William
Merrill, William E.
Merrill, M. B.
*Moody, Samuel Jr.
Moore, Alfred L.
*Mosely, Charles C.
*Moulton, Daniel
Maguire, C. M.
Nelson, Daniel P.
Newell, Joseph
Newell, Richard
*Noyes, Anson W.
Noyes, Stephen E.
Nason, Ezekiel G.
Ordway, Cyrus K.
*Ordway, George N.
Ordway, Cyrus D.
Ordway, Thomas G.
Ordway, Hanson
Ordway, Chas. W.
*Pillsbury, Daniel
Poore, Moses H.
Poore, Amos
Poore, Ben: Perley
Poore, George H.
Ridgway, M. Moses
*Rogers, Charles
Rogers, Calvin
Rogers, George C.
Rogers, Hiram
Ridgway, Sarah L.
Smith, Amos
Smith, David
Smith, James
Smith, Moses
Stanwood, Moses P.
*Thurlow, George
*Thurlow, Stephen C.
Thurlow, Thomas C.
Titcomb, Silas M.

NON-RESIDENTS.

Burnham, Ira T., Lexington;
Babson, Gustavus Jr.,
Seward, Neb.;
Beckford, C. H., Boston;
Balch, William H., Malden;
Balch, Eustis, California;
Bodwell, Henry A., Keene, N. H.;
Black, Jas. D., Harvard;
Blunt, J. Milton, Springfield, Ms.;
Bodwell, Jos. R., Hallowell, Me.;
Brackett, H. Clark, Virginia;
Brocklebank, S., Rumney, N. H.;
Burnham, Choate, Boston;
Clark, Joseph F., Boston;
Currier, Wm. A., Boston;
Chapin, W. C., Providence, R. I.;
*Cleaveland, N., Jersey City, N.J.;
Cleaveland, H. W. S., Chicago;
Colby, Chas. A., New York;
Chase, Jos. S., Malden;
Carey, James, Quincy;
Caldwell, L., Jacksonville, Fla.;
*Currier, Warren, N. Y. City;
Carey, James, New York;
Dole, Francis F., Chicopee;
Dodge, John S., Chicopee;
Eaton, Thomas, Harristown, Ill.;
Felton, Wm. H., Marlboro, Ms.;
Flint, Chas. L., Boston;
Fowler, W. W., Plymouth;
Fernald, Henry B., Washington;
Foster, James B., Melrose;
Flagg, Wilson, Cambridge;
*Flint, Thomas, Boston;
Flint, Horace P., Boston;
French, Chas., Davenport, O.;
French, Geo. H., Davenport, O.;
Gannett, W. W., Boston;
Gookin, Sam'l F., Boston;
Green, John A., New York;
Hadley, William, Boston;
Knight, S. Leverett, Clinton, Ia.;
Lyford, Geo. H., New York;
Lake, Chas. H., Churchill, Md.;
Low, Sidney, Groton;
*Maynard, Lambert, Boston;
Mills, R P., Dover;
Mitchell, Chas., Milton;
Merrill, Hayden A., Dedham;
Norwood, Gorham, Gorham, Me.;
Nichols, Albert, Chicago;
Nichols, D. P., Boston;
Ordway, G. W.,
Manchester, N. H.
*Parker, James M., Boston;
Putnam, Benj. C., Chelsea;
Pierce, Wm., Charlestown, Mass.;
*Payson, T. E., Providence, R. I.;
Page, Adino, Metamora, Ill.;
*Porter, Wm. F., Cambridge;
Poor, Henry, New York City;
Porter, Oliver, Norridgewock, Me.;
Payson, Samuel F., New York;
Patch, Ash'l H., Clarkville, Tenn.;
Putnam, Wm. R., Red Wing, M.
Phelps, N. L., Iowa;
Phillips, Samuel, Brighton;
Phillips, A. P., Medfield;
Quimby, T. W., Washington, Mo.;
Raymond, Sam'l, N. Y. City;
Reynolds, Wm. B., Derry, N. H.;
Robinson, John L.,
Manchester, N. H.;
Ridgway, M. M. Jr.,
Atkinson, N. H.;
Rogers, Benjamin, Malden;
Rogers, William, Illinois;
Stone, Edwin M., Providence, R. I.;
Snow, Jesse W., Boston;
Sargent, G. P., Philadelphia;
Stickney, Niles T., Chicago;
Stanley, Sam'l S., Charlestown;

Hayes, J. F. C., Iowa;
Hill, Moses, Revere;
Hill, Mark F., Derry, N. H.;
Holt, Jos. S., New York City;
Hubbard, J. G., Hampstead, N.H.;
Hutchinson, C. H., Rhinebeck;
Hubbard, Leavitt, Turner's Falls;
Hicock, S. S., Rochester, N. H.;
Juul, Conrad, New York;
Kent, Albert S., Colorado;
Kimball, Jonathan, Boston;
King, D. Webster, Boston;
Knight, J. M., Maine;
Kimball, Wm. F.,
Providence, R. I.;
Sleeper, S. C., Plaistow, N. H.;
Shattuck, L. P., Boston;
Spofford, Farnham, Washington;
Titcomb, Chas. A., Boston;
Taylor, Geo. H., Everett;
Tappan, S. B., Arlington, Mass.;
Whittemore, Chas. A., Boston;
Ware, Darwin E., Boston;
Whittemore, J. R., Chicopee;
Wheeler, H. T., Worcester;
Webb, Michael Jr., Cambridge;
Walker, Dexter M., Boston;
Wilder, S.W., Lowell.

CONTENTS.

	PAGE.
Address of David W. Low,	3
The Exhibition,	21
Report on Fat Cattle,	28
" Bulls,	28
" Milch Cows,	30
" Herd of Milch Cows,	38
" Heifers,	40
" Working Oxen,	42
" Working Steers,	42
" Town Teams,	42
" Steers,	43
" Stallions,	43
" Brood Mares,	44
" Family Horses,	44
" Farm and Draft Horses,	44
" Pairs of Draft Horses,	44
" Colts,	45
" Swine,	45
" Poultry,	49
" Ploughing,	53
" Agricultural Implements,	54
" Carriages,	54
" Dairy,	55
" Bread and Honey	56
" Pears,	76
" Apples,	77
" Peaches, Grapes and Assorted Fruits,	78
" Flowers,	79
" Vegetables,	81

Report on Counterpanes, Carpetings and Rugs, . . . 83
" Leather, ... 84
" Manufactures and General Merchandise, . . 84
" Fancy Work and Works of Art, . . . 85
" Children's Work, ... 86
" Farms, ... 86
" Wet Meadow and Swamp Lands, . . . 93
" Grain Crops, ... 99
" Root Crops, ... 107
" Strawberry and other Small Fruits, . . . 121
" New Variety of Winter Apples, . . . 126
Report of the Committee of Delegates to Farmers' Clubs and Town Fairs, ... 135
Farmers' Institutes, ... 151
Commemorative, ... 153
Attractive Homes, ... 155
Report on Treadwell Farm, ... 157
Report of Committee on Essays, ... 158
Treasurer's Report. 160
Officers and New Members, ... 162
List of Premiums, ... 165
Recapitulation, ... 170
List of Members, ... 171